

MOTOR TRENDS

The Car Owners Magazine

DECEMBER 1952
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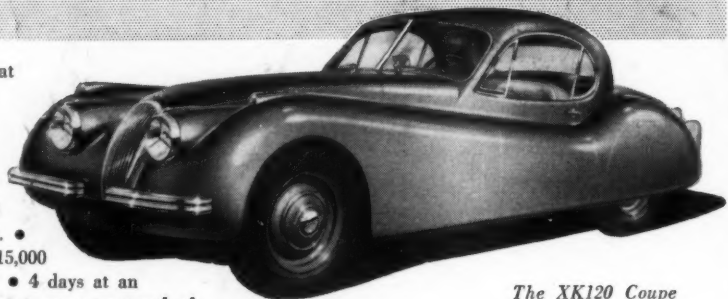
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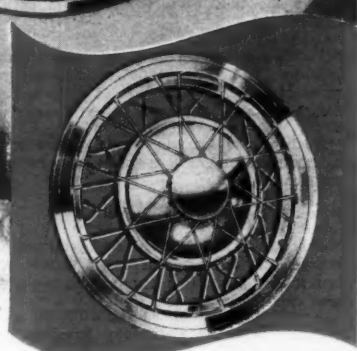
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DECEMBER 1952
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**MOTOR
TREND**



THE CAR OWNERS MAGAZINE

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Motor Trend

...and at presstime

THE ACCOMPANYING photos show that our "Classic Comments" author, Bob Gottlieb, is not only a writer, he's a doer as well. During the annual Catalina Road Race, sanctioned by the AAA and held this last September, Bob had a nar-



row escape while driving Lindley Bothwell's 1911 Simplex, but let Bob tell it in his own words.

"I was traveling about 80 mph, going into a sharp, left-hand turn. Just as I entered, the magneto went completely dead. Naturally, this resulted in literally no power so I couldn't get a bite at the rear wheels. I had a choice of going straight into the ocean by way of a 25-foot drop over jagged rocks or spinning out. I took the lesser of two evils, cutting the wheels hard left and applying the brakes. I spun around four and a half times, coming to rest with the rear wheels off the boardwalk, knocking down a good section of the handrail. Fortunately, no damage occurred to the car. The only reason the car didn't go over the edge was because the bottom of the transmission had dropped onto the boardwalk. What a happy guy was I."

PEOPLE WHO watch foreign car production with the idea in mind of owning a European model someday are probably
(Continued on page fourteen)

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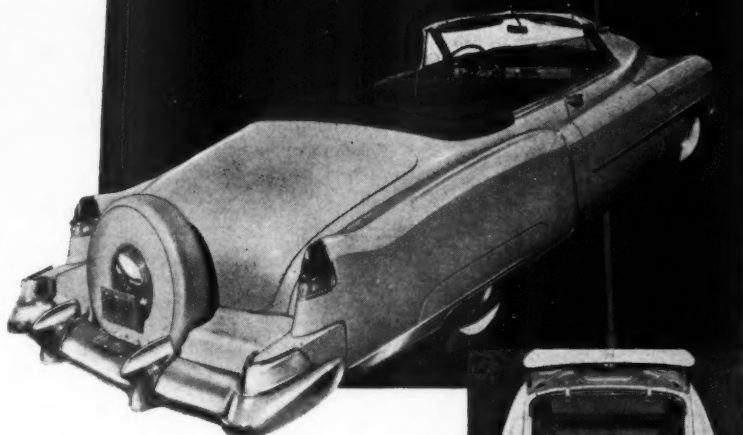
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Letters

EMERGENCY BRAKE LEVER CONTROVERSY

Gentlemen:

In answer to your request for our views on the location of the emergency brake lever, (August issue, page 6). There is much to be said in favor of placing the lever in the center, but, as reader Smith said, "Too many drivers can be dangerous." I for one feel that the man behind the wheel is in strict control and do not believe in mounting controls in a position for passengers to use at their discretion. If you can't trust the man behind the wheel, don't ride with him. Consequently, I don't think cars should be penalized for mounting them to the left of the steering column.

Jack Mathew
Mount Carmel, Pa.

Gentlemen:

Like brother Mr. Smith in the August, 1952 issue of MOTOR TREND, I too wonder why you call a right handed emergency brake lever a safety factor. Keep the emergency brake lever on the left where it belongs—away from where flighty passengers can grab it.

Jerome F. Downs
St. Joseph, Mo.

Gentlemen:

Regarding Mr. L. S. Smith's letter concerning the location of the hand brake. It is my understanding, the accessibility of the hand brake to the passenger is in event the automobile should start rolling while the driver is momentarily away from it. I know of a case in which the automobile rolled into a lake, and the passenger drowned because he could not reach the emergency hand brake in time. Except in a case where the driver would lose his mental facilities, I can see no other reason for the passenger to "take" control of an automobile.

Hubert A. Noble
Levelland, Texas

So far, the majority of readers responding to the "emergency brake lever location controversy" have agreed with most of the Detroit engineers—the proper place for the emergency brake should be to the left of the driver.—Editor

HOW TO BUY A CAR BOOK PRAISED

Gentlemen

I have recently purchased the Trend publication, *How to Buy a Car*. No doubt this wonderful book has been published months ago but it just came out here on Okinawa a few days ago. Considering the purchase of an automobile upon returning to the states, reading *How to Buy a Car* I am sure will save actual dollars in my pocket along with the purchase of a half-way decent car. It really amazes me about the book's stating the extent of crookedness some dealers and garage managers go through to rob an innocent citizen doing his best to get a fair deal. In my opinion, faulty advertising is the most part to blame and I think the Better Business Bureau should make more of an effort to clamp down on such as this. If newspapers and magazines make more of an effort printing articles warning the motorist of such racketeers and their operations, also policy taking more action on complaints, this whole situation would be brought down to a minimum.

Because MOTOR TREND is written from the car owner's point of view, it is doing a wonderful job showing the public what they actually get for their money and warn them of the loud advertisements boasting of "big bargains." I advise every car owner to read *How to Buy a Car*. The facts in this publication can save one much disappointment, and most important of all, valuable dollars. Let's get after these racketeers!

A/2C Andrew Calusine
Okinawa

If your newsstand cannot furnish you with a copy, send 75c plus 10c postage for an education in the art of buying a car—to Trend, Inc., 5959 Hollywood Blvd., LA 28, Calif.—Editor

HORSEPOWER RACE CAUSES COMMENT

Gentlemen:

I have just read "The Horsepower Race," in your October issue. It should be required reading for every American driver, and more especially, for every American designer (Continued on page eight)

This Month's Cover

Jack Campbell took the color shot of Bill Tritt's Glasspar-bodied sports car. For more on Fiberglass, see page 24. Our cover custom belongs to Nick Vaillanti; see page 32. The Red Hot Steamer is a 1909 Stanley. It is powered by a 10 hp recondensing engine; see page 38. Frank Trembley is the photographer.



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Motor Trend

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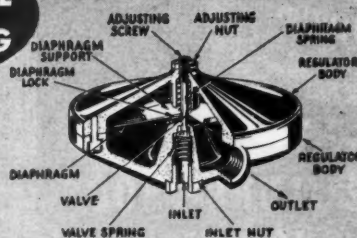
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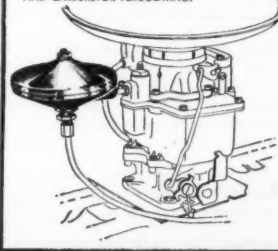
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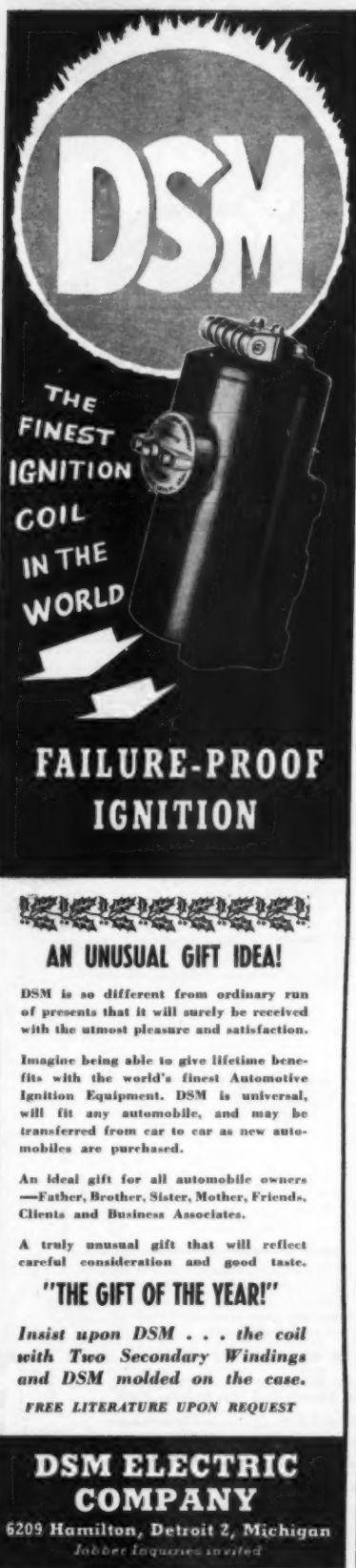
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Letters

(Continued from page six)

and engineer who helps build our cars.

. . . No, you didn't tell the whole story! Just how many hours of instruction did a professional, governmental-licensed driver give YOU! None? That's too bad, because you're driving a two-ton badly balanced guided missile capable of a hundred miles an hour on an over-crowded highway.

Have YOU successfully passed your yearly physical examination? Vision and depth-perception OK? Your license will be good for another year if you have. What? There is no such thing? . . .

And say . . . that new law requiring that your car be checked over thoroughly each 5,000 miles by a competent government-licensed mechanic is sure worth the fiver it costs you, isn't it? Many a time it's saved you money in big repair bills and maybe a fatal accident to boot. THEY DIDN'T PASS THAT LAW? THEY'RE GOING TO LET ANY OLD CRATE RUN ON THE HIGHWAY REGARDLESS OF CONDITION?

Did YOU know they buried old Damsite this morning? Yep, he was in plenty of minor accidents in his lifetime. Insurance man called him an accident-prone, whatever that is. Never had his driving license taken away though. How did he die? He made a left turn in front of a car over on highway 30. Man and woman in the other car might live, but both their kids were killed. This is the part of the story that wasn't told. Horsepower doesn't kill!

. . . The comparatively recent advent of automotive magazines such as yours has already made its mark upon an industry. Manufacturers in ever-increasing numbers have discovered that the public wants cars that hold the road, that have power and brakes and steering that will help them out of jams. They are listening and they will build them that way if we demand it loudly enough! But that is only half the battle.

YOU . . . ALL OF YOU . . . magazines, newspapers, sheriff's deputies, patrolmen, governors, congressmen, every mother's son of you . . . you know what has to be done. Please, in heaven's name, DO IT!

Harold Wilde

Green Bay, Wisc.

Gentlemen:

Have read your two articles on "The Horsepower Race" with great interest and find myself completely in accord with Mr. W. W. Fletcher. In addition to the many excellent points that he has made let me add what is very obvious, and that is that the GREAT majority of drivers are not physically OR mentally equipped to drive the ever higher-powered cars that we are building. This becomes painfully evident if one takes a 20-mile ride on any "open" highway. Within that distance one will encounter many people using their speed, power, and acceleration for the most foolhardy stunts imaginable.

Finally as an orthopedic surgeon let me tell you what horsepower is doing to people. It is maiming and killing them faster and more thoroughly than ever before. Each in-

crease in horsepower brings with it a new crop of individuals who must "try out" their cars, most often on the public roads. As long as such people are on the road, and we are not doing some of the things Mr. Fletcher suggests—building safer interiors, safer suspensions, etc.—let me say with him . . . "I pray we shall not share the same highway."

Martin W. Payne, M.D.
Las Vegas, Nevada

Gentlemen:

I am only 13 years old but I buy and enjoy your magazine very much, but being a great sports car fan I was greatly annoyed by a statement made by a certain John Grant in his part of "The Horsepower Race" article. Mr. Grant said, "Detroit knows full well that its patrons want no part of a tightly wound, small displacement motor (not a motor but an engine) which will require costly attention every 15,000 miles. Stateside Jaguar owners will testify to this."

I disagree with Mr. Grant . . . If a Jag requires that much attention how could they average 100.3 mph for seven days and nights covering 16,851 miles?

. . . I think Mr. Grant has the wrong idea about the Jaguar engine or it wouldn't be so popular.

Bill Cathey
Athens, Tenn.

Gentlemen:

What type of automobile does Mr. W. W. Fletcher desire of Detroit? I would suggest he jack up a Crosley body and then proceed to drive a tricycle beneath. I would guarantee we would most certainly not share the same highway . . .

Howard R. Schleihs
St. Paul, Minn.

Gentlemen:

I am a very good booster for your magazine but many more articles like the crude attempt at debate on the part of W. W. Fletcher in "The Horsepower Race" and I'll have to wait a week before buying my MOTOR TREND from the stands—to see if they are a good investment . . . His article must appeal to a moron because it doesn't make sense in any shape or form. Just a lot of questions unanswered and incoherent in every respect.

Keep your mag coming, I wish it were weekly instead of monthly.

Ray Buckman
San Diego, Calif.

TRIAL TEST PERIOD ADVOCATED

Gentlemen:

The letter by Mr. Arthur M. Webb in the October issue contains an excellent suggestion. After insurance repair jobs, there should indeed be a 10-day test period before signing the release.

It is regrettable that so many big auto dealers are such a sloven crew of bandits in the repair department. They will find that such policies will pay off chiefly in public ill-will, mistrust, and even downright hatred.

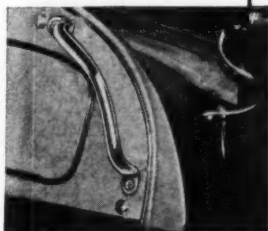
It is high time for certain manufacturers to crack down on the banditry of their dealers, not only on insurance jobs, but also on routine repair work.

Morris Horton
Farmersville, Texas

Distinctive Gifts...

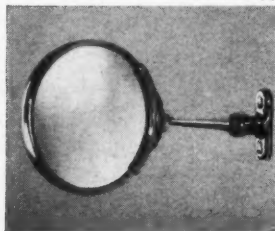
every sports car owner will prize

Arnolt Autocessories



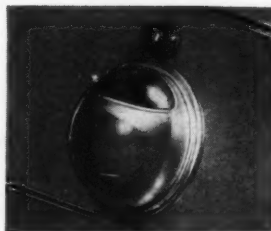
MG ASSIST GRIPS

These gleaming chrome-plated grab handles for the TC or TD MG fascia combine beauty with practical utility.



IMPORTED MIRRORS

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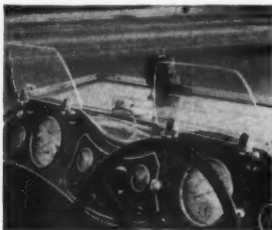
TROUBLE LAMP

Ideal for safe night road repairs. Plugs in any cigarette lighter. Interchangeable clear and red lenses for both sides of lamp.



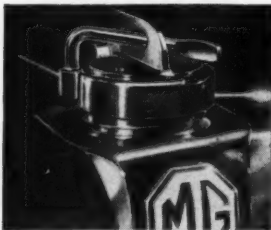
VALVE COVER

This highly polished cast aluminum valve cover for MG cars effectively dampens engine sounds and "dresses up" the motor.



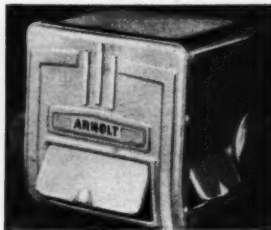
WINDWING-WINDSCREEN

Another famous Arnolt original—custom-tailored for sports cars. Fully adjustable and non-rattling. Folds flat against windshield when top is up.



RADIATOR FILLER CAP

A real racing type for MG. Cam and lever action... no threads! Opens in one motion, closes and locks in one motion. Finished in lustrous chrome.



SPORTS CAR HEATER

12-volt heater, designed and built by Arnolt specifically for sports cars. Tailored kit for installation in the MG. Adaptable to other sports cars.

ARNO-LITE DRIVING LAMPS

For safer night driving give this handsome chrome-finished Arno-lite driving lamp. May be used as a flood or spotlight and mounted in a low position on the central badge bar. (See below.)



Here are only a few of the distinctive gift suggestions that you will find in the new 1952 complete line catalog of Arnolt Autocessories. Send for your copy now and the name of the nearest Autocessories dealer! (Please enclose 25c to cover cost of mailing.) Address Dept. 12MT

Autocessories, Ltd.
WARSAW, INDIANA, U.S.A.

DIVISION OF
ARNOLT CORPORATION

Spotlight on Detroit as we go to press

DETROIT, MICHIGAN—With the advent of new model time, the auto industry is pulling aside its year-long blackout curtain to reveal the most important styling and engineering changes since the end of the war.

On tap for 1953 are numerous **super-powered engines**, drastically redesigned bodies, wider use of devices like **power steering** and **power brakes**, and the introduction of gimmicks like **air-conditioning** and **wire wheels**.

Details of five new lines are made public this month. A first-hand account of the screaming 205 bhp Lincoln will be found on page 30, together with a selection of MOTOR TREND photos taken at a special press preview. Dodge, Chrysler, and DeSoto will be found on page 30. Between now and the end of January, 12 more makes will be unveiled. Following is a car-by-car rundown of the most important features expected to be heralded:

PLYMOUTH will have a new body which is a slightly smaller version of the 1953 Dodge. The hood will be shorter. Glass area will be improved. Engine is not changed.

FORD will sport only slight styling changes. Grille is remodeled. There will be no overhead valve engine next year.

CHEVROLET has both a new body and greater power. Two engines will be offered, each with 235.4 cu. in. displacement. One for standard transmission develops 105 bhp with a 7.2:1 compression ratio, the other for Powerglide transmission develops 115 bhp with 7.7:1 compression. The automatic transmission also has new features.

OLDSMOBILE will have improved styling and performance. A 12-volt electrical system is anticipated, as are wire wheels in some series.

BUICK's long-awaited V-8 will bow, ad-



Though styling changes on the 1953 Lincoln are minor, its engine has given it new life. The V-205 powerplant underwent a series of tests recently (see page thirty)

verting a horsepower near the 190 mark. It too may have a 12-volt system. Dynaflo transmission is said to be better.

PONTIAC has a complete new body and an engine with higher compression. Its V-8 engine is at least a year away.

CADILLAC will boost bhp to stay in a competitive position. It will be in the 200 to 210 range. Air-conditioning and a 12-volt electrical system are other anticipated features.

NASH will probably not be too greatly changed. The Rambler will be restyled with the Farina look.

STUDEBAKER will have striking new styling, coming as close to sports cars in height and length as is possible in a family-type car.

WILLYS will bring out a four-door sedan and hardtop. No major changes seen.

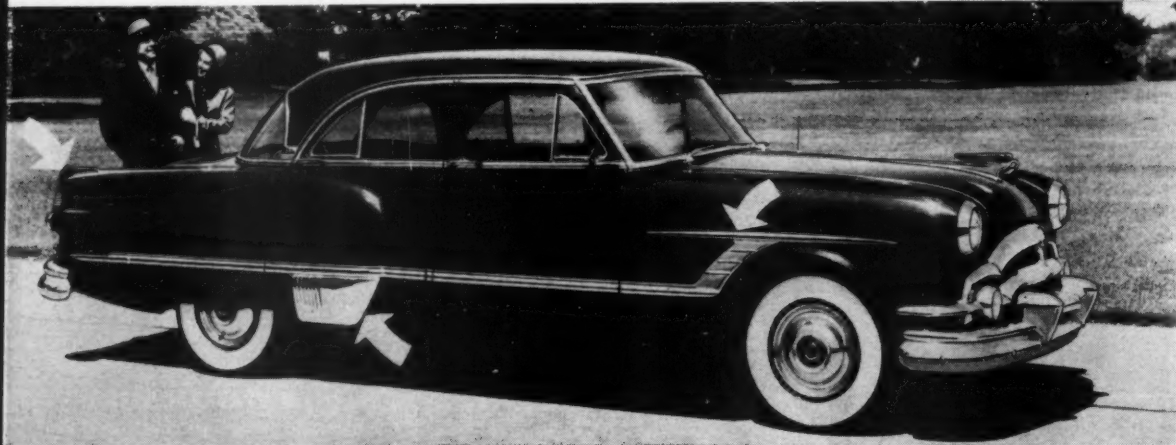
MERCURY offers only modest appearance changes, but announces a snappier engine.

HUDSON's big news will be its new light car. This will have an entirely different six-cylinder engine and body than is found on current models.

In a major manufacturing marketing move, **PACKARD** is introducing a luxury line of cars for 1953 as well as a more moderately priced "Clipper" series. Prices range from \$2500 for a standard Clipper to \$6900 for a custom-built, chauffeur-driven sedan.

Both lines retain the styling which has come to characterize Packard in recent years. However, there are a number of engine changes to boost horsepower. A new power steering unit is available, plus such equipment as **air-conditioning**, **power brakes**, and automatic transmission.

(Continued on page fifty-three)



Packard retains its individualistic styling characteristics. Most changes are in repositioning of chrome, as shown by white arrows

*The
ACTION CAR
FOR
Active Americans*

New 140-h.p. Red Ram V-8, most efficient auto engine design in America.

New sleek, trim Beauty-Action Styling, with distinctive Jet Air-Flow hood.

New Gyro-Torque Drive with flash-action "Scat" gear for safer passing.

New colors and combinations...inlasting enamel that keeps its lustre.

New road-hugging, curve-holding ride, with new "Stabilizer" suspension.

New Travel-Lounge comfort with more hip-room, head-room and elbow-room.

New "Pilot View" curved windshield and wide wrap-around rear window.

New "Cargo Carrier" rear deck has up to 11 cubic feet more carrying capacity.

New steering ease, with controls centered between the two front wheels.

Announcing the
New-All New '53 Dodge



**You'll Want to Get Your Hands on This
Power Packed Beauty**

Here is a new kind of car, designed to meet the needs of active, on-the-go Americans more completely, more thoroughly, than ever before!

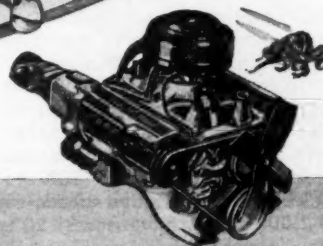
It's powered for action, with a thrilling reserve of acceleration that lets you drive with greater confidence and safety. *It's styled for action*, with lower, livelier, lovelier lines and spacious Travel-Lounge interiors. *It's engineered for action*, with a new road-hugging ride, new steering ease, new Gyro-Torque Drive for nimble change of pace.

You'll want to see and drive America's Thrilling Action Car... The new '53 Dodge.

Specifications and Equipment subject to change without notice

On Display Now

Visit Your Dodge Dealer and Thrill to a "Road-Test" Ride



Sensational New
140 Horsepower RED RAM V-8 ENGINE!

Packs more power punch per cubic inch displacement... delivers a full 140-h.p. on "regular" gasoline. It is the only engine design to bring you the triple power advantages of hemispherical combustion chamber... short stroke design... high-lift lateral valves. More fuel energy goes into power, less is wasted on heat and friction. Most efficient engine design in any American car!

FOR *Imported Cars*
of *Distinction*

SEE

ARNOLT



MORRIS

Daimler

ROLLS-ROYCE

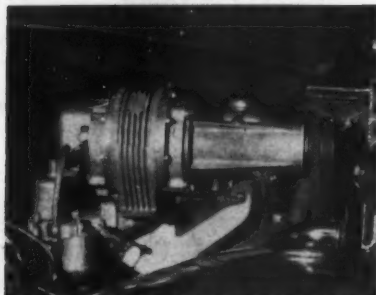
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S. H. ARNOLT, DISTRIBUTOR

415 East Erie Street • Chicago 11.

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ANOTHER "EXCLUSIVE" for Autocessories, Ltd.

The internationally famous British line of **Shorrock Superchargers** for MG, Morris Minor, Austin and other imported cars is now being distributed in the United States exclusively by Autocessories, Ltd., Division of Arnolt Corporation, Warsaw, Indiana.

The Shorrock Supercharger makes possible increases in maximum brake horsepower ranging from 30% to 50%. Even at low engine speeds of 1,000-2,000 r.p.m. increases of 20% to 25% are obtained. The Shorrock Supercharger not only increases the b.h.p. of the engine for faster and smoother acceleration but does so **quietly and economically**. Exhaustive tests under a wide variety of operating conditions have proved that the Shorrock Supercharger makes available a standard of **efficiency, reliability and quiet performance** that have not been hitherto approached. For details write Dept. 12MT.



Autocessories, Ltd.
Warsaw, Indiana

Twelve

Editorial

READERS' COMMENTS ON ROAD TESTS

IN THE OCTOBER issue of **MOTOR TREND** we asked for comments on our road tests, asking you to take a few minutes to fill out a questionnaire and send it in to us. Were we surprised! We had no idea that the response would be so great.

You'll never know how gratifying it is to ask readers for their thoughts on a subject and then have them not only furnish you with the answers, but to go one step further and enlarge on their answers. We know it took time to sit down and write letters to us about the road tests, because it took us time to read them.

Fortunately, we've found out that the majority of you agree with our methods of testing and our approach toward the new cars. But, as always, when you get a cross-section of opinion you unearth usable ideas. We'll try to incorporate as many of these ideas into next year's tests as possible. It would not be possible to publish all the thoughts that were given us, but the following excerpts from letters that accompanied the questionnaires are quite typical.

"... I only have one objection... you too often forget that the majority of automobiles... are bought by people who want what I want out of a car: comfort, quiet, steady ride, dependability, and above all, a feeling of safety and sturdiness..."

"... What I want most (out of a car) is reliability..."

"... As you pointed out in a recent editorial, you need not be 'brutal' when criticizing a car or product. But you must be honest and unafraid to find fault if your reports are to be of help to your readers..."

"... The soft suspension of Detroit-made cars is a definite safety hazard..."

"... Economy of operation and handling qualities (are) my main reasons for buying a car..."

"... How do you find the service rendered by the dealers of the make tested? ... How do they receive you when they learn that they didn't sell you the car? Are their mechanics trained to do the job the way you want it done?..."

"... I don't know of any highway capable of top speed operation of any modern car. Safety is very important but is, in my opinion, geared directly to handling and acceleration..."

"... The features I desire most in an automobile are: ride, handling, roadability, stability on average roads, roominess and comfort in seating, and above all, quietness of operation with adequate power for smoothness of operation..."

"... I presume most of your readers are of the hot rod or sports car variety

because of your emphasis on acceleration, speed, cornering, etc. I too am interested in such things academically. Practically, they don't mean much to a person over 35 years of age..."

"... Maybe through your efforts we can start a crusade to put accurate speedometers on cars. For my part I'd like to know exactly how fast I am going..."

"Since you of **MOTOR TREND** feel a 'trend' towards getting yourselves 'typed,' I believe perhaps we, your faithful readers, can possibly be of help to you. At least thanks for giving us the opportunity, and above all, for being just plain honest about it all..."

"I am... inclined to believe you are too lenient. There should never be any compromise with good, sound engineering practice in reporting results of a test..."

"... Call them the way you see them. It is the only way you can deliver an honest opinion..."

"... All around quality (is) sadly lacking in all current production models. This includes: powerful, silent, trouble-free, easy-to-get-at engine; strength of materials; quality in every detail..."

"... We are interested in getting cars which give safe, comfortable, enjoyable transportation, but it has to be at the lowest cost possible... We are very interested in the engineering... of durability, safety, high gas mileage, quietness..."

"... We of the public don't give a damn whether your drivers like chrome or not... We'll make up our minds about style..."

"... The deciding factor in my purchase... was the excellent customer relationship of the company..."

"... The average person's choice and preference for a particular make automobile is more likely to be influenced by such considerations as styling, trademark prestige, eye-value and advertising claims than it is by the critical and searching appraisal of road test reports..."

"... What I want in a car and what I think the public in general desires in a car is dependability..."

And on and on and on. As you can see, we've run out of space, but as mentioned previously, these excerpts are typical. We'll definitely consider *all* suggestions for improving our road tests. In the meantime, we want you to know that we sincerely appreciate YOUR interest AND effort in not only sending in the questionnaire, but also in analyzing our road tests so that you could comment on them so objectively. Please continue to do so in the future.

—Walter A. Woron

Motor Trend

AUTOMOTIVE LIQUI-MOLY

THE ORIGINAL Lockrey MOLYBDENUM PROCESS FOR 'Plated-on' LUBRICATION

Amazing SUPER LUBRICANT

**Now... Better
than ever!**

Now MAKES YOUR OIL 383% MORE EFFICIENT!

A record two year winning streak on the leading speedways across the nation, a series of consistent successes in every important stock car run in the country, have won for Automotive LIQUI-MOLY hundreds of thousands of fast friends and enthusiasts. "ALM" has given conclusive test-proof of performance on the toughest race tracks in the land, the most gruelling hill climbs, and wherever wheels turn on the open highways. Every bit of knowledge and experience gained went right back into making "ALM" the perfect product. Success now comes to crown the tireless efforts of A. J. Lockrey, inventor and manufacturer of Liqui-Moly... a New, and Improved, a Better Automotive LIQUI-MOLY now achieves what no other lubricant or additive dare claim.

The NEW Automotive LIQUI-MOLY is now packaged in a yellow, white and black, Sealed, Tamper-proof, 10½ oz. can and is distinctly marked, "The Original Lockrey Process..."

HERE IS HOW AUTOMOTIVE LIQUI-MOLY PROTECTS YOUR CAR ENGINE —

"ALM" 'plates' every friction and pressure surface of your engine with solid MoS₂, the most durable lubricant known... smoother, greasier, and more slippery than any substance ever made available for your car.

"ALM" provides 'stay-put' MoS₂ lubrication... absolutely stable under all conditions. It does not 'squeeze-out' at the highest pressures and withstands unbelievable extremes in temperature without losing its amazing lubricating powers. It cannot be 'thrown off' by the centrifugal action of rotating parts.

"ALM" gives your engine full lubrication protection at all times... always there... ready for the first

kick of the starter, winter and summer, eliminating wear-producing 'dry starts' and critical 'warm ups.'

"ALM" acts immediately. From the very moment it is poured into the crankcase it begins its 'plating' process. Every moving part begins to respond with a noticeably new gliding smoothness. Friction drag is reduced to an absolute minimum, and with it comes a marked step-up in power and speed and a resultant decrease in gas and oil consumption.

"ALM" is the absolute lubricant... the perfect insurance which protects your engine against scoring and seizing even in the event of total loss of oil and water.

Automotive LIQUI-MOLY contains absolutely NO kerosene and NO Graphite

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THE LOCKREY COMPANY
Southampton, New York

EXCLUSIVE DISTRIBUTOR
MOLY MOTOR PRODUCTS CORP.
LIQUI-MOLY Building, New York 1, N. Y.



ONE-TREATMENT
CAN*

\$1.50
10½ oz.
by weight

*Sealed and Tamper-proof for your protection

Economy Quart
Size.....\$3.75

- ◆ These are claims supported by government findings and in government reports.
- ◆ These are claims substantiated by large industrial users all over the country.
- ◆ These are claims endorsed by every racing chauffeur, and motor enthusiast who ever 'rev'd' up an "ALM"-treated engine.
- ◆ These are claims no Other Lubricant or Additive Can Make.

Treat your car to the New "ALM" treatment!
It will do wonders!

MILL RIVER PRODUCTS, INC.
GREAT NECK, N. Y.



Giant LIFTING Power for tired springs

Air Lifts installed in the rear of your car offer an entirely new approach to solve your over-load and trailer hauling problems.

Air Lifts cushion your front suspensions to prevent spine shattering jolts. They restore sagging springs, save your tires, save costly front-end repair bills and make driving safer.

Nothing to Remove — Quickly and Easily Installed.

SEE YOUR LOCAL DEALER OR WRITE TO:

AIR LIFT CO.

2330 W. MAIN STREET
LANSING, MICHIGAN



COMPETITION MINDED!

CHECK THESE "LITTLE THINGS" THAT COUNT!

The new BREATHER that answers the problems arising from larger bores, longer strokes and higher rpm engines by:

- COOLING YOUR OIL
- RELIEVING CRANKCASE PRESSURE
- INCREASING ENGINE LIFE
- LESSENING OIL LOSS

The Breather Kit is complete with mounting instructions, gaskets and all bolts necessary... fits all cars.



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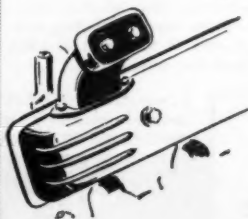
\$5.75
(Inc. Fed. tax)

SO. CAL. OVERHEAD VALVE BREATHER

Fits Olds—Cads—Chrysler

Used successfully on Cad and Chrysler Allards in competition

Price **\$5.75**



...and at presstime

(Continued from page five)

very much interested in the announcement by the British that jet airplane production may affect car production. According to information from various news sources, 85 per cent of car production is aimed for export, 50 per cent of which comes to the U. S. This may be curtailed to meet increased schedules for jet planes.

Incidentally, the British industrialist William Lyons, chairman of Jaguar Cars, Ltd., of Coventry, England, recently spent some time in the U. S. in connection with importing and distributing the popular Jaguar cars. According to information here, no styling changes will be made in the near future on Jaguars. Their feeling is that they are way ahead of other manufacturers as far as styling is concerned. They "do no face lifting of models" as is practiced by others.

A THOROUGHLY reliable source indicates that there will be a change in rules on turbine-type cars for Indianapolis. They will probably be set up by weight only, with no restriction on the compressor intake area. Class 1 will be cars under 2200 pounds; Class 2, cars over 2200 pounds. This seems like the most equitable method of setting up turbine classifications, since other forms, using displacement and/or thrust, would impose unfair restrictions. We hope that when the rules are finalized, they will not prevent the Broffitt-Walsh entry from being built in time for the 1953 Indianapolis 500.

GREAT NEWS ON THE HALL OF FAME! Five years in the making, the Hall of Fame is intended to perpetuate the memory of the greats in the racing industry by setting up displays (plaques, photographs, trophies, etc.), in a suitable surrounding that race fans can visit. That surrounding has been found—it's no less than the Edison Institute, Greenfield Village, Michigan. This assures the Hall of permanence, dignity, and a wonderful presentation, since Greenfield Village (located on Ford Motor Company grounds) is already dedicated to the automobile.

First selection of members to be nominated to the Hall of Fame (by an 18-member panel, comprised of AAA Contest Board members, those active in the sport, active in the past, qualified historians, the public press, plus a voting member from AAA clubs and the Edison Institute) will be made from racing industry members active during the years 1902-1912. Other selections will be made each year in 10-year periods up to the present. At the end of five years a plan will be instigated to recover the entire period from 1902 to the present. The actual election will come from these nominations by action of the AAA Contest Board. The Edison Institute reserves the right to select the displays.

—The Editors

The Smartest Traveler
of the Season...



uses the **SMARTEST ACCESSORIES**

THE NEW 1953 SKIDMASTER—the improved skid control engineered to eliminate skidding on all wet, slippery or dry surfaces. It fits all cars . . . it's NOISELESS in operation . . . it's simply installed. Mr. Claus can't afford accidents on his busy holiday travels . . . can you?
\$39.95

MONRO-MATIC—the new wonder shock absorber by Monroe. Automatic adjustment for all roads and loads . . . designed for all cars, both passenger and sports . . . quickly, easily installed. Santa insists on maximum comfort along with complete safety . . . do you?
only \$6.95

McRAY PROTECTO ROD—the simple, inexpensive way to keep your motor cool and efficient. The Rod fits easily into your radiator . . . stops rust, scale and corrosion . . . the galvanic action REMOVES deposited scale! Why risk getting all hot and bothered while sledging around these winter streets?
only \$1.95 postpaid

PRECISION TACH—the most accurate of all tachometers. If you'll look closely you'll note that S. Claus watches his RPM the modern way. This electric tachometer has a two inch face; is universal, to fit any car; dash or steering mount; ten minute installation; and the unit is hermetically packaged to arrive in your hands in perfect condition.
complete kit \$27.50

P.C.A. SAFETY BELTS—the only known advertised automotive belts which conform to C.A.A.'s Technical Standard Order C-22A. (Will withstand a load of 2850 lbs. around the human body.) P.C.A. Belts reduce hazard of being thrown against dash or windshield; prevent any occupant from being thrown out onto pavement; enable driver to maintain control of car during and after a collision. They're comfortable; won't wrinkle clothes; the webbing is nylon; they're beautiful, in grey, blue, brown, maroon, green or black. A strapped S. C. is taking no chances . . . how about you?
front seat belt (each) \$14.95
long rear seat belt (each) \$15.95

AND SANTA is waving his latest "find" for the discriminating motorist who has leather to take care of—PRO-CLEAN, the combination cleaner and protector. In a smart plastic bottle, cosmetically pure PRO-CLEAN is the ultimate in leather conditioners. Gals, give this smart sock giftie to that man of yours; guys, give it to your "other love"—the family car.

ALL OF THESE ITEMS ARE SOLD ON A MONEY-BACK GUARANTEE. DEALERS AND DISTRIBUTORS, WRITE FOR INFORMATION ON ANY OR ALL OF THEM.

A Safe and Merry Christmas to You All!
4872 Venice Blvd., Los Angeles 19, California

BARLEC'S



THE RED DEVIL

STOPS PING!

SAVES YOUR MOTOR

Gives C-P-C* for full utilization of engine SPEED, POWER & MILEAGE potential. This amazing new product assures you smoother performance under fast acceleration, as it reduces VIBRATION . . . DETONATION & SPARK-KNOCK in your motor.

*Controlled Progressive Combustion

IT'S ALL A MATTER OF TIMING . . . the SOLE and ALL-IMPORTANT PURPOSE of this new Synchronizing Control Valve is to synchronize the distributor plate (ignition) with the speed of your car . . . THUS ELIMINATING MOTOR DAMAGING ENGINE KNOCK! The critical period during which the RED DEVIL works is the 10 seconds during rapid acceleration between the retard and full advance of the distributor plate.

CONVINCE YOURSELF . . . by making this simple test on your RED DEVIL installation: When the Control Valve is installed, advance the timing to border-line detonation. After you have noted the astounding improvement, reverse the proper installation of RED DEVIL (this makes it inoperative) and note the former annoying and troublesome "ping."

UNCONDITIONAL MONEY BACK GUARANTEE

If your RED DEVIL, properly installed, fails to STOP PING** during rapid acceleration, remove it and return for complete refund.

**Red Devil may not completely eliminate PING in some cars, but will definitely lessen it. Especially recommended for Cadillacs, Oldsmobiles, Buicks, Fords and Chevrolets.

ONLY

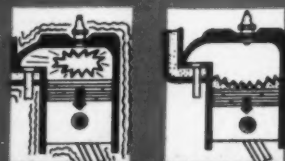
\$2.98

COMPLETE
POSTPAID

GANE ECONOMY CLUB

CARDS HONORED

NEWHOUSE AUTOMOTIVE INDUSTRIES, Dept. MTD-12, San Gabriel, California



Newhouse Automotive Industries
Dept. MTD-12
San Gabriel, California

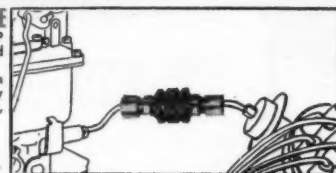
Please send me.....RED DEVILS. Post-
paid. I enclose \$2.98 each in cash,
check or money order.

Name.....

Economy Club No. if any.....

Address.....

City.....Zone.....State.....



RED DEVIL is easily installed in a few minutes in the connecting line between the distributor and carburetor.

Get More SPEED... POWER and ECONOMY

with NEWHOUSE AUTOMOTIVE EQUIPMENT

Customize Your Car

with a CONTINENTAL KIT!



Stop Throwing Money Away!

NEW OIL FILTER ELEMENT NEVER NEEDS REPLACING
GUARANTEED FOR 10 FULL YEARS

Famous "Filterall" filters 100% of your oil through a permanent bronze cone cartridge which never wears out. This new porous metal oil filter pays for itself by saving the cost of stock oil filter cartridge replacements. It filters out dirt particles as small as 39

millionths of an inch but does not soak up valuable protective oil additives. To clean, just rinse the bronze cartridge in

gasoline. Complete filter assembly.....

\$12.95 ppd.

Cartridge only (to fit your filter).....

\$6.95 ppd.

(Specify make and model of car and present filter.)

SPECIAL KIT ONLY \$24.50 COMPLETE—New all-metal, 2 piece economy unit. (Tire stays in trunk.) Installs easily by drilling 3/4" holes, no alterations required. (Includes chrome wheel disc, license holder and chrome light.) Fits all 1949-52 Styleline Chevy, 1949-52 Ford, 1949-51 Mercury and 1949-51 Plymouth cars.

ALSO GENUINE DELUXE CONTINENTAL KITS

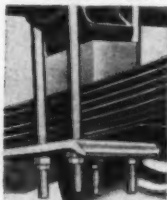
Kit is complete with gravel guard tire pan, metal tire cover, remote control lock release, chrome wheels, special hub cap, license light, safety lock assembly, wheel mount and bracket, bumper extensions, and all necessary bolts and nuts for installation.

All 1950, 51, 52 Fords.....	\$ 79.50
Chevrolet (Styleline body), tire size 670 x 15, 1949-52.....	89.50
Nash Rambler ('51-'52).....	\$116.50
Pontiac ('49-'52).....	135.00
Kaiser (1947-52).....	134.50
Packard (1951-52).....	159.45
Cadillac (1950-52).....	139.50
Studebaker (1951-52).....	139.00
Oldsmobile (1949-52).....	149.50
Mercury (1951-52).....	149.85

Send only 20% deposit, balance C.O.D.



MAKE YOUR CAR LOOK LONGER, LOWER AND FASTER



Improve your car's appearance, get a lower, safer center of gravity and decrease rolling on turns by lowering it. Just change the shackle bars or the U-bolt in the rear. Lowers car about 2 1/4" . . . no heating, cutting or welding. Includes four extra long U-bolts and two blocks. Lowering block kits for all cars (except coil spring types). Specify make, year and model of car.

Complete kit, only.....

\$4.60

Shackle bars (for '32-'48 Ford & Merc. only).....

\$1.29

STOP MOTOR SKIP BUCK And

With a DUAL POINT BREAKER PLATE

Replace your present stock (single point) ignition with a precision, 50 ball bearing dual point breaker plate. It increases cam angle from 31 degrees to 36 degrees dwell and also increases coil saturation to full capacity. This plate produces a hotter spark . . . giving better mileage, easier starting and smoother performance. Features "super" size dual tungsten points. The only 8 cyl. plate available with 50 precision ball bearings. Fits: '37 to '52 Oldsmobile 8, Pontiac 8, Buick 8, Studebaker V8, Cadillac V8, also Packard '51 to '52 (with Delco Dist.).

\$11.95

Postpaid.

Also non-ball bearing dual point breaker plates for '49-'52 Ford 6, '37-'52 Chevy, '49-'52 Ford V8 and Mercury, '50-'52 Lincoln:

\$6.95

Specify. Postpaid.



● DEALERS! Write on your letterhead for free information.

● BIG 1953 CATALOG—Hundreds of Hi-Performance products—only 25c

NEWHOUSE AUTOMOTIVE INDUSTRIES, Dept. MT-12, 5805 E. Beverly Blvd., Los Angeles 22, Calif.



AUTO THEFT IS BIG BUSINESS

SINCE THE CLOSE of World War II, more than one million automobile thefts have been reported to law enforcement agencies throughout the United States. The prey of amateur and professional criminals alike, automobiles now are among the largest items on the nation's ledger of annual losses due to theft.

The magnitude of the automobile theft problem is shown in reports which have been received by the Federal Bureau of Investigation from law enforcement agencies in 381 U.S. cities. These reports reveal that the value of automobiles stolen in the 381 cities totaled more than \$95,000,000 during 1951, while all other property taken by robbers and thieves was valued at little more than \$61,000,000.

Over the entire nation an estimated 196,960 automobiles, valued at more than \$190,000,000, were stolen last year. Even when it is considered that an estimated 180,810 stolen automobiles were recovered during 1951, the citizens of the United States still suffered a net loss of \$15,600,000 through theft of automobiles alone in that 12-month period.

Statistics such as these certainly do not adequately portray the true picture of the losses suffered by law-abiding citizens through the theft of automobiles. Each of the 196,960 cars which were stolen resulted in police investigation, financed by public funds. In addition, many of the owners of these cars were dependent upon them in their vocations. Others suffered severe inconvenience which cannot be estimated in dollars due to the loss of their automobiles.

Statistics showing the total estimated value of automobiles stolen in the United States demonstrate that car theft is a major law enforcement problem. Aggressive action has been taken in the past to combat the auto thief, and such action has been



By J. Edgar Hoover
DIRECTOR, FEDERAL BUREAU
OF INVESTIGATION

stepped up to further combat this menace. Like all criminal acts, automobile theft is not solely the concern of the police or of the person who suffers the loss. It is also the concern of the public and must be met with vigorous and constructive action.

Armed with Federal legislation which makes illegal the inter-state transportation of stolen motor vehicles, the FBI has been active since 1919 in smashing auto theft rings which have operated on a national or international basis. The investigative jurisdiction of the FBI is limited to those cases in which the stolen automobile has been transported from one state to another; however, through cost-free services provided by the FBI Laboratory and Identification Division, the FBI has been able to assist state and municipal law enforcement agencies in identifying and convicting numerous auto

thieves whose operations have not extended across state lines.

Each year it has become increasingly more obvious that the challenge presented by automobile thieves can be adequately met only through united action. As a first step in effecting a more concentrated offensive against automobile thieves, the FBI called upon state and local law enforcement agencies to meet with its agents in regional conferences which are now being held throughout the nation. Also participating in these conferences are state motor vehicle bureaus, the National Automobile Theft Bureau, and other interested agencies. Devoted solely to open forum discussion of car thefts, the conferences are meeting everywhere with interest and enthusiasm. An encouraging number of fine solutions to this problem have already been proposed at these conferences, and there has been universal agreement that an alert, educated public is the greatest asset available to the law enforcement officer in coping with this type of crime.

(Continued on next page)

WILL YOUR CAR BE STOLEN? IT MIGHT BE, IF YOU . . .

- ... leave your engine running while you jump out to run into the store
- ... leave the keys in your ignition lock
- ... leave your car unlocked
- ... don't report prowlers in parking areas
- ... don't report persons tampering with automobiles

There are, in general, three types of car thefts. The first is committed by amateur thrill seekers who steal automobiles for "joy rides." This type of crime is responsible for an untold amount of needless grief each year since the overwhelming majority of amateur "joy riders" are able to steal only those automobiles which thoughtlessly have been left unlocked.

One such theft was committed by a "gang" of four boys whose "joy ride" in a stolen automobile came to an end when they collided with a gasoline pump and ran into a store building. The oldest of these boys was nine years of age, and certainly none of the four had the criminal skill to steal a securely locked automobile.

Numerous other cases have been brought to my attention in which motorists have left their cars unoccupied and with engines running while they stopped to attend to minor business matters. Finding their automobiles missing upon their return, these persons have learned too late that carelessness is a close companion of the auto thief.

The amateur automobile thief must rely upon the negligence of motorists. He has neither the training nor the tools to enter a securely locked automobile and drive it away. Although the overwhelming majority of automobiles stolen by "joy riders" are recovered soon after they are taken, each such theft requires the investigative time of police officers and the expenditure of public funds which might have been saved had the motorist thought to lock his car.

A second type of automobile thief is the person who steals a car for immediate transportation or for use in another crime.



FBI Laboratory and Identification Division has assisted local law enforcement agencies in identifying and convicting numerous auto thieves. Here a metallograph is used to study metals

Eighteen

Although these persons fundamentally are not professional automobile thieves, they generally are hardened criminals who are well trained in the art of breaking into locked automobiles and starting them without the use of ignition keys.

John Dillinger was one such criminal. While Dillinger and his gang were plundering the Midwest, they frequently stole automobiles for use in their holdups and for transportation purposes. The FBI first was able to enter actively into the search for Dillinger when he stole an automobile in Indiana in March, 1934, and transported it to Illinois. Dillinger's 15-month flight from justice was ended when he was killed while resisting arrest in a gun battle with FBI agents and the East Chicago, Indiana, police in July, 1934.

Although the majority of automobiles stolen by this type of criminal later are recovered, many of them are badly damaged or completely demolished in efforts to prevent their being identified or linked to other criminal acts.

Professionalism in the theft of automobiles reaches its ultimate peak in the operations of the gangs which are organized in a business-like manner to steal cars for resale. Over the years FBI agents have cooperated with local police in smashing auto theft rings which were so highly specialized that the function of each member of the ring was narrowly defined. These rings, tightly organized and composed only of skilled professionals, recognize no state boundaries in carrying out their criminal activities.

A typical auto theft ring employs a "spotter" who locates automobiles to be stolen, often having instructions to find cars of a particular make and model. Another member of the ring steals the car and delivers it to a garage where the automobile may be repainted and such identification marks as engine and serial numbers altered or removed.

In addition, these rings have employed persons who specialize in obtaining false registrations and bills of sale, using still others to drive the cars to various points throughout the nation to be sold.

One such gang which was composed of 10 men recently was smashed by the FBI in cooperation with several municipal and state law enforcement agencies in the South. This ring was engaged primarily in the theft of 1949 and 1950 models of one type of automobile. Included among its members were persons who were skilled in changing engine and serial numbers. In addition, they often replaced the transmissions and locks on the cars before selling them. The expenses incurred by such auto theft rings are high. Their continuation in "business" is dependent upon handling a large number of stolen cars.

In another case, the FBI (Continued on page forty-two)



Typical of thoroughness with which FBI investigates stolen cars is this national automotive paint file. The search here reveals year and make of car from which paint on hub cap came

Motor Trend

The Incomparable Mercedes



Mercedes has earned world-famous prominence as result of progressive engineering

By Robert J. Gottlieb

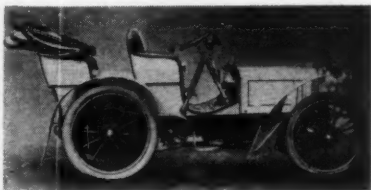
Royal playboys of the Riviera were sometimes seen in this supercharged model 540 K roadster tearing up roads near Corniche

DIE HOCHLEGANTEN Fahrzeuge werden von geübten Leuten in Livree sicher geleitet. Die Wagen sind in zwei Minuten zum Fahren gerüstet. Schriftliche Anfragen und Bestellungen werden postwendend beantwortet.*

Early advertisements of the Daimler, the predecessor of the Mercedes automobile as we know it today, told nothing of the engineering accomplishments accredited to the creators of the German car, which is now generally associated with the "best cars in the world."

Yes, America is proud of the Duesenberg, England of the Bentley, Italians point with pride to the Alfa, but a German revels at the sound of the magic

* Translation: The very elegant machines may be driven without fear by liveried people accustomed to driving. The cars are ready for driving in two minutes. Written questions and orders will be answered by return mail.



This 1901 Mercedes was the father of the touring car. Powered by a two-cylinder, six-horsepower engine, the car got its name from Mercedes Gelleneck, daughter of plant's general mgr. The name stuck

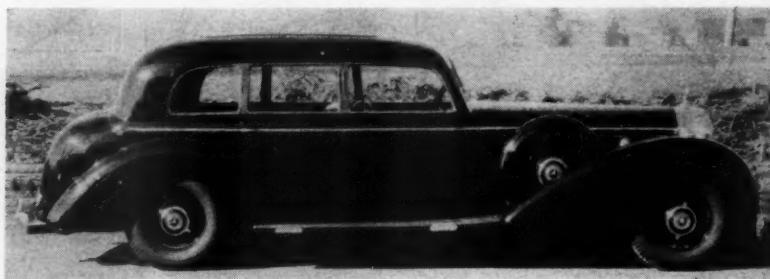
words, Daimler, Benz, and Mercedes. He has reason to exult for Daimler Motoren Gesellschaft, since its inception, has produced the world's fastest and finest automobiles and has developed and utilized more innovations on the automobile than any other manufacturer. Its cars have won more races than the cars of any other competitor. Its founder was responsible for the world's first vehicle propelled by a four-cycle internal combustion engine. The Merc, as it was affectionately called long before the appearance of the American product with the same name, had a humble beginning, achieving the ultimate in success, despite great adversity.

It all began on December 18, 1883 when a patent was issued to Gottlieb Daimler for the first practical ignition system for an internal combustion engine. The ignition system permitted an increase in revolutions per minute and horsepower beyond the highest expectations of contemporary

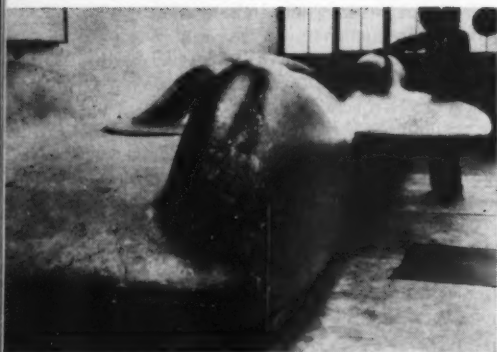
engineers. This was indeed the germination of the automobile.

Daimler was an engineer employed by Otto and Langen, manufacturers of stationary gas engines. He was intrigued by the possibilities of improvement in the internal combustion engine and in 1882 left his employment so that he would have more time to experiment. Lacking facilities, he converted the family greenhouse into a makeshift shop, and it was there that he and his close friend Wilhelm Maybach spent many hours in experimentation. The first fruit of their labor was the patented ignition system. For the first time, an engine was in existence which would truly be successful in a motor vehicle. To prove its efficiency the two cronies built a two-wheel vehicle bearing a strong resemblance to modern day motorcycles. Daimler's oldest son was chosen as test driver, the contraption fired, and

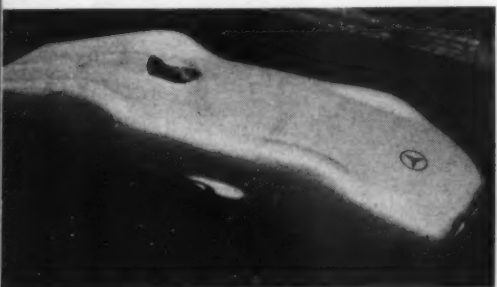
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Grand Mercedes limousine (1936) with eight-cyl., supercharged engine could go 150



Here is the contender for the world's top speed record held by John Cobb. The car, however, never ran and is in a museum



Lang, Caracciola, and von Brauchitsch won a triple victory at Tripoli in this model (Left) three-liter, (right) 1.5-liter models which scored 12 of 23 "Grand Epreuves"

Twenty

The airplane-type doors, when open, look like wings on a bird. This model, the Type 300SL, is one used in competition events. It was winner of both first and second spots at 24-hour race at Le Mans last June. In upper picture, note spare tire placement

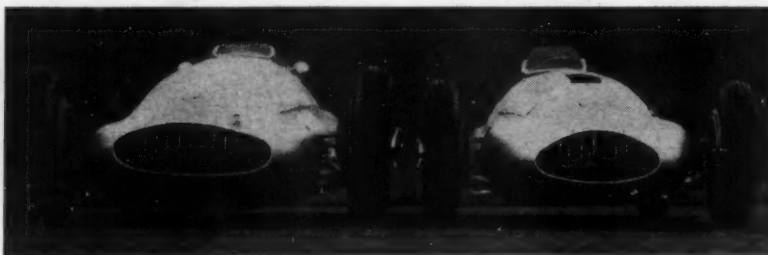
the initial run commenced. To the amazement of all but Daimler and Maybach, the machine achieved a speed of 25 miles per hour and showed clearly the pattern of things to come. To start, a lever was pulled which moved an idler pulley which in turn caused a belt to tighten, thus engaging the drive. Speed regulation was even more primitive; the exhaust valve was held in a closed position, causing the engine to miss, thereby reducing speed.

Elated at their success, Daimler and Maybach went back to work. People in the quiet neighborhood became suspicious of the intermittent, staccato noises emanating from the greenhouse and assumed that the occupants were engaged in counterfeiting operations. As a result, a raid was conducted, much to the chagrin of everyone concerned.

In the ensuing year (1886), Daimler and Maybach built a four-wheel vehicle

powered by a 1½ horsepower engine. It had no differential, but slipping leather clutches compensated for turns. A few of these cars were built but there were no buyers; residents and prospects could see no future in them. His finances in sad shape, Daimler sought outside help. He travelled to Paris and with the help of one Sarazin, negotiated a contract with Panhard et Levassor and Peugeot. These firms agreed to manufacture the Daimler engine and to use the engine in vehicles manufactured by the respective firms.

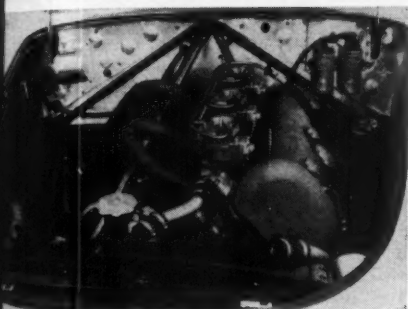
Daimler returned to Cannstatt, Germany, to continue inventing and designing, but by 1890, lack of finances again threatened to impede progress. A group of business men convinced Daimler that a corporation was the only solution and Daimler Motoren Gesellschaft came into existence. The corporation took over Daimler's patents, engines and property,



Motor Trend



This is the Mercedes 300SL without the top. Car is ready for competition use



Engine of 300SL model is same as 300 and 300S with addition of a third carburetor

electd him vice-president, set up a rigorous production schedule and promptly ordered him to cease wasting time on improvements and concentrate on production. Daimler and Maybach were dejected. They formed another corporation and returned to further development of the internal combustion engine. Meanwhile Daimler Motoren Gesellschaft was manufacturing a four seater and by 1893 had a closed taxi on the market. In that year, however, Panhard et Levassor and Renault had produced engines which were more refined and advanced than the original Daimler engine and Daimler sales dropped dangerously. The worried directors again approached Daimler, seeking a consolidation of Daimler's creative corporation with Daimler Motoren Gesellschaft. Daimler was promised facilities and money in return for his improvements and in 1895 the merger was accomplished. For the first time the Daimler company was then in a position to maintain production and yet obtain and use the much needed improvements devised by Daimler.

The world's first automobile race occurred in 1894 in the run from Paris to Rouen. The first three cars to finish were powered with Daimler engines. This started a victory string which continued incessantly in the years that followed.

During the late Nineties automobile racing was a world-famous sport attracting sportsmen, playboys, and manufacturers alike. During this period the Daimler victory string attracted Emil Jellinek, a wealthy banker and sportsman. Jellinek invested a large amount of money in the Daimler organization and wielded his influence by demanding faster and more

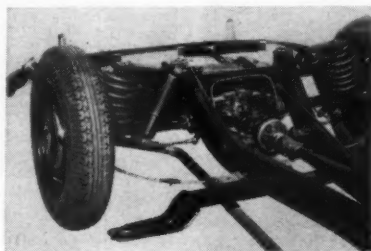
powerful cars. He placed unlimited funds at Daimler's disposal and ordered him to build a car that was faster and more powerful than anything the world had ever known. The car was to be named after Jellinek's daughter, Mercedes, and was to have four cylinders and 35 horsepower.

Daimler designed the car but unfortunately did not live to see it in action. He passed away a few days before its completion. Was it successful? It won the road race from Nice to Aix-Senas-Salon and back at an average speed of 38 mph for 258 miles. Immediately the factory commenced work on a 60-horsepower model for consumers and three 90-horsepower monsters for competition in the 1903 Gordon Bennett race. Fate again wielded its arbitrary hand. Exactly two weeks before the big race, a disastrous fire destroyed the entire factory. One hundred of the 60-horsepower cars, which were in various stages of completion, and the three 90-

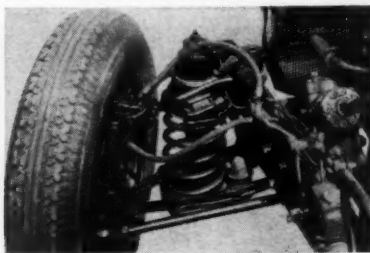
horsepower racers were burnt to the ground. Factory officials were very glum. The vaunted Mercedes would be unable to compete in the big race.

A few of the 60-horsepower cars had been sold to the public. As a last resort, the factory directors decided to enter three of these cars in the big race if they could be repurchased or borrowed from the owners. Frantic messages were relayed and the necessary cars were eagerly donated by their owners. Time did not permit radical changes in the automobiles. Hastily, the engines were tuned and the touring bodies replaced with bucket seats. For the first time Mercedes entries were in the position of underdogs and not favorites. The competition included, amongst others, a Peerless, a Winton, two 70-hp Panhard Levassors, an 80-hp Mors and a 100-hp Napier juggernaut. You guessed it; a Mercedes driven by Jenatz placed first and a Panhard, second. Third place went to Baron de Caters, also in a Mercedes. De Caters might have placed second but for an act of sportsmanship outstanding in the field of auto-racing. Jarrott had flipped in the Napier and de Caters stopped to make sure that Jarrott was not badly injured. Then he stopped again at the grandstand to inform officials that Jarrott was alive. Many spectators were convinced that de Caters would have placed second but for his humanitarian act. Thus, standard production automobiles, with the touring bodies removed, had defeated the world's finest racing cars and Mercedes fame became even greater.

(Continued on page forty-four)



Mercedes independent rear end suspension system is secret of comfort on rough roads



Front suspension system shows ruggedness. Mercedes cars are noted for roadability

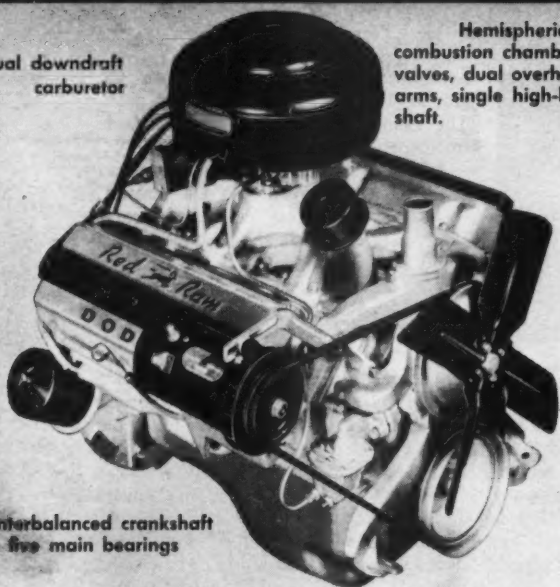


The 300 is considered queen of post-war line and is Mercedes bid for world markets. Car is six-pass. convertible, has luxurious interior, conceals a championship engine

Dual downdraft carburetor

Hemispherical combustion chamber, lateral valves, dual overhead rocker arms, single high-lift camshaft.

Counterbalanced crankshaft with five main bearings



DODGE



Rear-end styling of new Dodge features a stern-side gasoline filler and a pushbutton lock on the rear deck lid



Complete new styling is an outstanding feature of the 1953 Dodge. Coronet model has new 140-horsepower Red Ram engine

DE SOTO



DeSoto offers both a V-8 and a six-cylinder series. Styling is somewhat reminiscent of another member of Chrysler family

Twenty-two

CHRYSLER LINE

By Harry Cushing

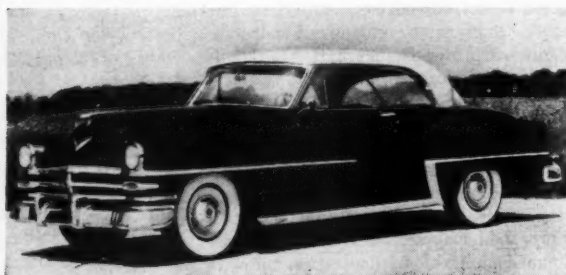
PROBABLY THE most eagerly awaited announcement by MOTOR TREND readers from the Chrysler Corporation is the new Dodge with its 140-bhp, V-8 engine. It incorporates the most dramatic changes in Dodge's 38-year history. Even though its body lines are completely different than any previous styles offered by this firm, it is the powerplant that contains the most sensational news.

According to Dodge engineers it produces "More horsepower per cubic inch of displacement than any other automobile engine now in volume production." It peaks at 4400 rpm; has 241.1 cu. in.; compression is 7.1:1; develops 220 lbs.-ft. torque @ 2000 rpm. Bore and stroke are 3 $\frac{3}{16}$ in. x 3 $\frac{1}{4}$ in. Called the "Red Ram" it is offered in the "Coronet" line.

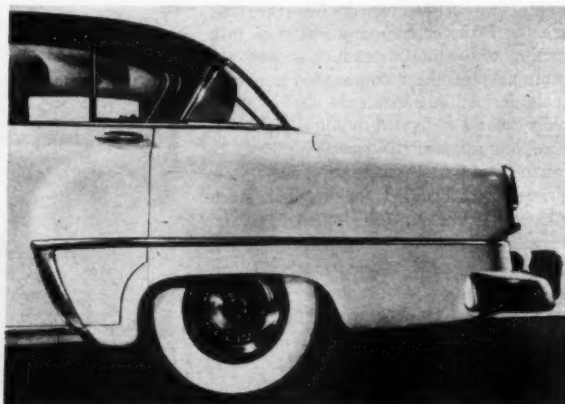
Like the other V-8 engines developed by Chrysler Engineering Division, the Dodge uses hemispherical combustion chambers. It also features an ingenious lateral valve arrangement operated by dual overhead rocker arms and shafts, actuated by dual pushrods off a single high-lift camshaft. Breathing efficiency of the engine is further improved by the unique design of the manifold system. For fuel intake, cylinders are fed by equal-length manifold branches so that each cylinder gets a full charge of fuel. For exhaust, each cylinder has its own individual port to the exhaust manifold, each of which is connected individually to the exhaust outlet tube.

Other features include a short, rigid counterbalanced crankshaft with five main bearings; slipper-type aluminum pistons with cast-in ring inserts for controlled expansion; floating power

CHRYSLER



New Yorker Deluxe special Newport club coupe features interiors which blend with exterior colors. Wheelbase: 125 $\frac{1}{2}$ in.



Rear deck treatment is new for 1953 Chrysler line. Rear fenders have long, low, sweeping lines which blend smoothly

Motor Trend

• New engine and body design for Dodge

• New body styles for Chrysler and De Soto

• New Chrysler Special designed by Ghia

engine mountings; positive-pressure engine lubrication; and a fixed shunt-type oil filter. Carburetor is a dual downdraft type, with thin aluminum throttle body. Four transmissions are offered. They are standard with dry clutch, standard with over-drive, fluid drive, and gyro-torque converter.

As in all Chrysler lines, wire wheels will be available as optional equipment at a cost of approximately \$50.00 per unit.

Dodge also will offer a more moderate-priced, six-cylinder series, "The Meadowbrook." The L-head engine develops 103 bhp @ 3600 rpm with a displacement of 230.2 cubic inches.

The 1953 Chrysler line is notable for improved and refined styling. Two engines are again offered. The potent 180 bhp "FirePower" is in all models except the Windsor series, which features a 119 bhp "Spitfire" powerplant.

Chrysler is the first of the new cars to introduce a 12-volt electrical system. Optional power steering, power brakes, a new cowl vent heater, and optional air-conditioning on the Crown Imperial line about the first of the year.

The front-end styling for the 1953 Chrysler models is designed to retain established identification. Grilles have been redesigned and refined. New hood top ornaments and new parking light styling are featured. On the sides of the cars, low lines are achieved by carrying the front fender top line back through the doors and blending it with the rear fender top lines.

Driver and passenger visibility has been considerably improved by more extensive use of glass. The total glass area has been increased from 23.3 to 25.0 square feet and includes a new

one-piece, wraparound, curved windshield.

The new Chryslers are one inch lower than the previous models, measuring 62½ inches in height. Despite the lower overall height, headroom has been slightly increased.

An increase in car width from 75½ to 76¾ inches results in ½-inch additional seating room in the front seat and a rear seat ½ of an inch wider. An increase of 11 cubic feet in the body volume has resulted in a much larger trunk compartment with a capacity increase of 26.8 to 38.7 cubic feet—an increase of 44.4 per cent.

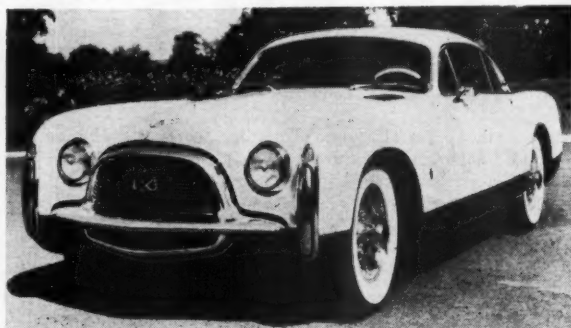
Like the other Chrysler Corporation Divisions, who are bringing out cars this month, DeSoto offers both a V-8 and a six-cylinder series. Styling is somewhat reminiscent of another member of the Chrysler family.

Although the wheelbase has been maintained at 125½ inches, overall length is increased to 213¾ inches, and width to 76¾ inches.

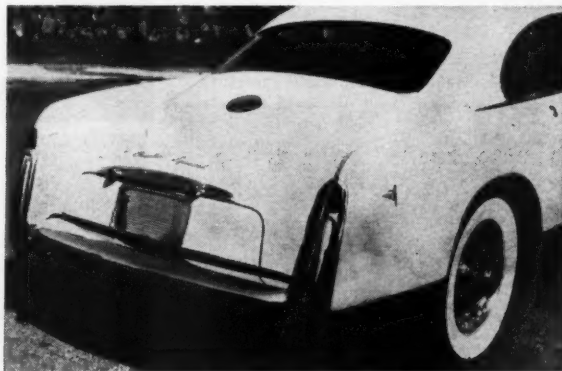
Available equipment includes power steering, power brakes, a choice of two transmissions, tinted safety glass, and safety rim wheels. Eleven body styles are offered in the two DeSoto lines.

Chrysler Corporation's newest sports experiment was unveiled at the recent Paris Auto Show and is expected to be brought to Detroit shortly. The car is a two-seater coupe, powered with the "FirePower" V-8. It also features power steering and braking. The noted European designer and stylist, Ghia, built the car in Turin, Italy.

CHRYSLER BY GHIA



Chrysler Corporation's newest sports experiment is shown in this two-seater coupe. Note distinctive grille treatment



Car was given a preview showing at the Paris Auto Show recently. Styling was done by noted designer Ghia, Turin, Italy



Luggage carrying capacity of Chrysler special sports coupe is unusual for this type of body styling. Note accessibility



The interior styling is especially distinctive and luxurious. Car follows the C-200 and K-310 as a study in design



By Jim Potter

Ever since Henry Ford experimented with his synthetic-bodied car, many auto designers, engineers, and the public have envisioned cars rolling off the assembly lines made of this new wonder material now commonly referred to as

FIBERGLAS



Quantity production methods are being used in Glasspar plant. This Fiberglas body is for the No. 1 Woodill Willys car



Shorty Post (left), expert in building chassis for special-bodied sports cars, builds frame to fit Willys running gear

Twenty-four

NOW, AFTER MORE than 10 years, the Detroit automobile manufacturers are seriously considering producing cars with bodies of polyester resin-impregnated Fiberglas. Though quite a stir was created throughout the United States when Ford first exhibited his V-8 chassis with plastic body on August 13, 1941, the war intervened, ending a project first begun in 1930. Ford's plastic car was a result of Henry's philosophy that agriculture as well as the metals industry should be supplying the material needs of the automobile industry.

In Germany, plastic body research reached culmination in 1940 after a start in the late Thirties. On orders from top Nazis, work was carried out by Auto-Union, famed in racing car history. Their plans were to design a small car using a body built from laminated sheets of paper and fabric and held together with plastic bonding. Under the development of Dr. Ferdinand Porsche, designer of the immaculate German Porsche automobile, they built jig models for "double-wall" construction which consisted of thin plastic sections with as much or greater strength than thick single-wall construc-

tion: According to reports, this design is currently being used by Fiat on their new V-8 sports coupe.

In England, actual prototype production was achieved by Mulliner, the British coachbuilder, on a Lanchester chassis. The car, a four-door sedan, proved satisfactory in weight, strength, and service. Experimental-wise, a door was made of plastic to fit a pre-war Ford Prefect; its weight was five pounds compared to 20 pounds for a door constructed of steel.

From the Europeans and the mass-producing Detroit manufacturers, let us take a look at the backyard variety of the automobile building business, which is now being viewed by Detroit with considerable awe and growing respect. Since Detroit has been slow in meeting the demand for sports cars, numerous small-scale projects have sprung up in a fantastic scramble to be first with an American-built sports car. Molding of automobile bodies was an almost insurmountable handicap in this new development, but the new material—Fiberglas—has become the answer to this problem, since expensive die casting operation, tooling, and highly skilled labor is not required. Now, a most unusual trend is

Motor Trend



Weight for weight, Fiberglas is proved to be much stronger than steel, as dramatically shown by Shorty Post with board



Shrinkage problem of Fiberglas is solved at Glasspar by cementing metal hood frames to Fiberglas; then cut-out is made



Peter Hancock (left) and Bill Tritt, genius of Glasspar organization, are shown working on original sports car mock-up

taking place all over America—the metal bodies are being discarded and the creative-minded who do something about their ideas are building plastic-bodied cars!

Undaunted pioneers in this development brought out four Fiberglas cars and displayed them at the 1951 Motorama show held at Los Angeles. Bill Tritt showed his original, the Brooks "Boxer," Eric Irwin offered his "Lancer," and Ralph Roberts and Jack Wills turned up with the "Skorpion" and its prototype, the "Wasp." Public interest in these new concepts in automobile design using the lightweight material was tremendous—a gratifying result to those who had spent an unrecorded number of man hours, sweat, and tears in products which one of them called "hunks of glass string and bubble gum."

Tritt, now only 35, entered the plastics field about 3½ years ago when a friend wanted a corrosion-proof, lightweight boat. The Green Dolphin Boat Works at Montecito, Calif. was formed and, with a partner, Tritt built several plastic-bodied boats of various sizes. In 1950 he formed the present Glasspar Body Works and a major part of his business is in the building of the increasingly popular Fiberglas boats.

It was only natural for the enterprising Tritt, who had an extreme fondness for sports cars but who was never able to afford one of the trim European models then being seen in increasing quantity throughout America, to turn his design talents to the automobile body. Shortly after the showing of his "Boxer" at Motorama, Tritt designed and built a new

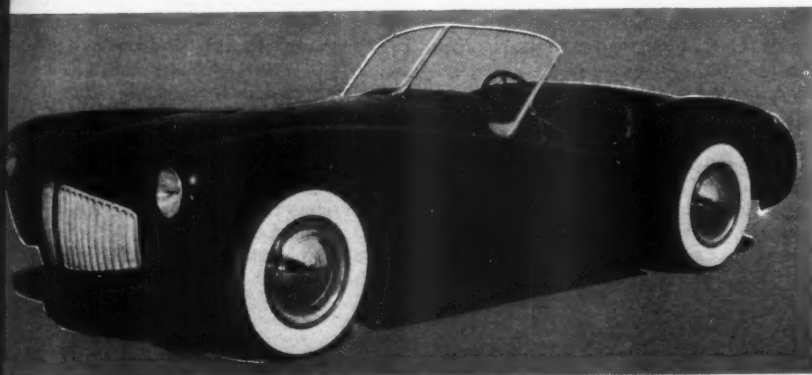
writing has been a total of 87 bodies, with about one body a day now coming off Glasspar's assembly line. In seeing this apparently simple method of producing automobile bodies without the need of expensive tooling and machines, we asked Tritt if it wouldn't be feasible for any backyard mechanic to set up shop and go into production of Fiberglas-bodied cars. His reply was enlightening, especially to the young hopefuls who are embarking on this type of endeavor.

"I don't want to sound discouraging, but that is a common fallacy running rampant in manufacturing plants, body shops, and among individuals all over the country. Every Joe Doakes who has read the fascinating literature on Fiberglas cars thinks it a cinch to build his own sports car. As with any new material, there are bound to be problems and disadvantages. After 3½ years, I can truthfully say here at Glasspar we have had our share."

Tritt pointed out that one major problem successfully surmounted at Glasspar is the fact that the Fiberglas material does not have any bearing strength, falling far short of metal in this regard. Wear at metal attachment points was especially significant where motion was experienced. To overcome this problem, the angle irons required to attach the Fiberglas body to the frame are cemented to the Fiberglas material, then about three layers of Fiberglas cloth are placed over the irons, and it is firmly held in place by a brush coating of polyester resin. Even in using small metal screws or bolts for the attachment of smaller parts, experience has indicated that the Fiberglas surface will not stand up under constant stress. The metal will gradually work a hole in the Fiberglas; therefore, suitable rubber grommets must be used at any stress attachment points.

Another major problem in working with Fiberglas is shrinkage, which amounts to approximately three per cent during the curing process. A cut-out in the material cannot be made without a certain amount of shrinkage taking place. To avoid this

(Continued on next page)



Production of Glasspar bodies is now at rate of one per day. Design is by Bill Tritt

Embryonic Automobile Business

In the year that has followed this first major presentation of the plastic-bodied car in America, MOTOR TREND has uncovered facts which indicate a tremendous amount of interest and considerable activity. In this embryonic automobile business, however, the talkers, dreamers, and dabblers, predominate. Among the doers is young Bill Tritt, guiding genius of Glasspar Body Company of Santa Ana, Calif., a busy new firm suffering from the growing pains of a rapidly expanding business.

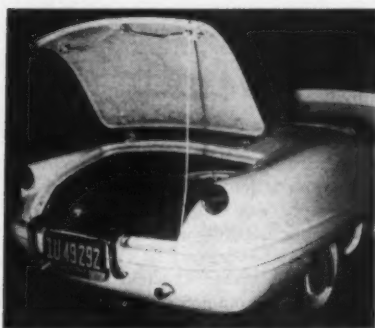
body mold. The sports car which was built as a result has been shown all over America, including the International Plastics Exhibition in Philadelphia and the International Motor Sports Show in the Grand Central Palace in New York City. The exhibition of Tritt's car, backed by the Naugatuck Chemical Company, plus the accompanying voluminous publicity, began bringing in orders, mostly from individuals who mounted the body on modified stock Ford, Mercury, Singer, and other chassis.

Tritt's production at the time of this

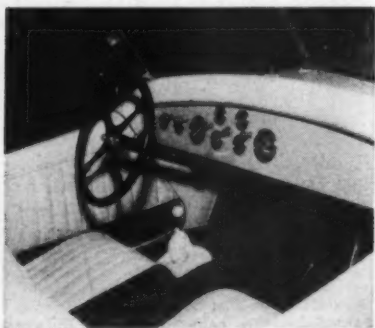
FIBERGLAS CONTINUED



Doug Caruthers of Vikingcraft is in production of Fiberglas bodies for Crosley chassis



Workmanship on Super Skorpion is excellent. Trunk space for so small a car is good and over-all styling is pleasing



Dash panel of the Super Skorpion is also made of Fiberglas. Over 50 body kits of the Skorpion have been produced to date



Here an assembly operation on Skorpion is seen. One-piece front end assembly is slid into place on standard Crosley chassis

Twenty-six

problem, Glasspar's bodies are made in one piece. After curing, the doors, hood, and deck-lid frames are cemented to the one-piece unit and, only after this is dried, the material is cut for the desired openings. As a result, a much better fit is obtained than is normally found with metal components. On Glasspar bodies, the doors close solidly, reminding you of the door on your refrigerator at home.

Surface deformities in the Fiberglas material are another source of major concern. After a certain length of time exposure to heat, air trapped in voids under the surface expands, causing small surface blisters to appear. So, unless you are experienced in working with the material and know its characteristics, you are liable to end up with a pock-marked surface which might become a monstrous headache. In any event, finishing the surface of the material properly is a time-consuming operation.

As Tritt explained, not only are there manifold problems in working with this new material, the would-be auto designers should be familiar with lofting, mold building, and have a smattering knowledge of engineering layout, otherwise his design may be very much out of proportion, his frame may give him considerable trouble, and the fitting of the car's running gear to the body and to the frame may turn his step-child into a seething nightmare.

With this advice we decided against launching into the sports car body build-

ing business and sought, instead, places where Glasspar-bodied cars could be bought. We learned that besides individual purchasers, Tritt is furnishing bodies to at least one sports car builder who has three cars under construction and is arranging to go into one-car-per-day production to meet anticipated demands.

"Wildfire" to have Stock Willys Parts

Realizing the possibilities of a sports car built from standard Willys parts, B. R. "Woody" Woodill, aggressive Willys dealer of Downey, Calif., is putting his plans into operation. The result: a Glasspar-bodied sports car mounted on a custom-built frame using stock Willys parts.

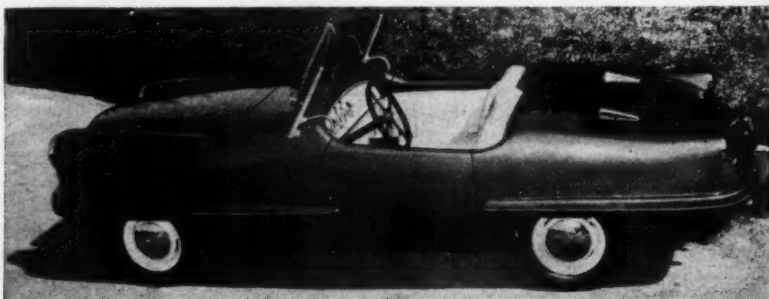
The "Wildfire," as Woodill's car is called, is unique in that all running gear—the engine, drive shaft, steering mechanism, rear end suspension system, and basic frame—consists of standard Willys components with only slight modifications to meet the sports car design of the Fiberglas body. Major change is in the frame. Though using basic Willys frame members, the passenger compartment floorboard and firewall and driveshaft tunnel are built right into the frame, a design developed by Harold "Shorty" Post of Orange, Calif. Post has spent the last 18 years improving on frame design and body assembly problems on cars ranging from one-of-a-kind streamliners to special-bodied sports cars.

Powerplant of the Woodill car is the rugged Willys F-head, 90 bhp engine. Steering is $2\frac{1}{2}$ turns from lock to lock, and nine different rear end gear ratios (ranging from 5.88 to 3.88) are available. Overdrive will be standard equipment unless specifically undesired by the customer. Wheelbase is 101 inches and body height (not including top) is only 37 inches. Price is expected to be approximately \$2900.

First showing of the Woodill "Wildfire" was at this year's Motorama show in Los Angeles. As soon as production is large enough to meet local consumption, Woodill expects to market two models of the trim sports car through authorized Willys dealers throughout the U.S.

The Skorpion and Super Skorpion

Another pioneer who has participated in and seen the rapid acceptance of Fiber-



Super Skorpion body features doors, deck space for luggage. This body sells for \$640

Motor Trend

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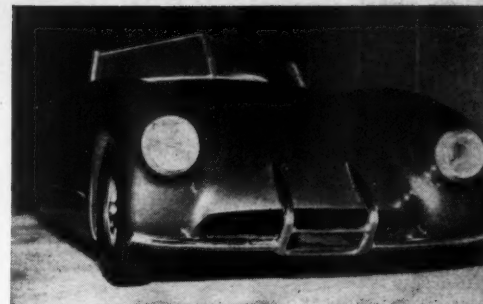
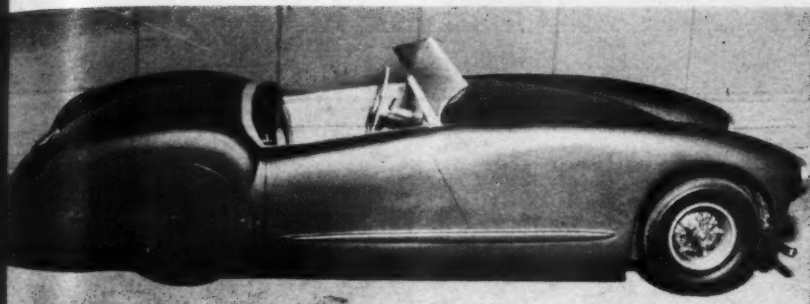
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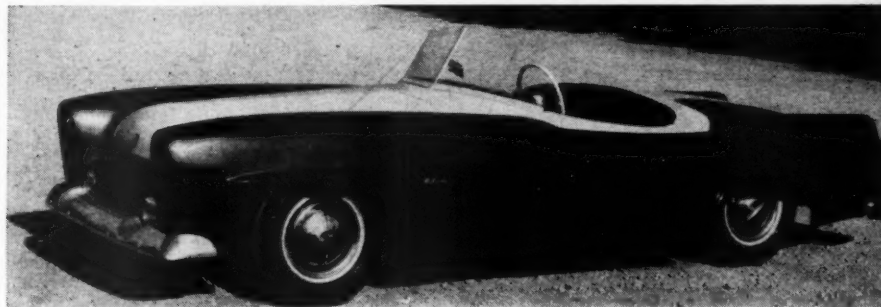
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The "Cheetah" shown above is actually a quarter-scale model of a proposed Fiberglas-bodied sports car. It is designed for a modified Ford chassis and features completely new lines for a sports car. The car is expected to be completed early next spring

Doug Caruthers designed the "Cheetah." Note that the grille is absent and only a jet-like opening is used for cooling



Here is the rear end styling of a new Fiberglas car being built near Detroit

The "La Saetta" is a two-seater sports car body designed to fit any wheelbase car from 110 to 116 inches. Testaguzza Body Company expects to produce five bodies per day

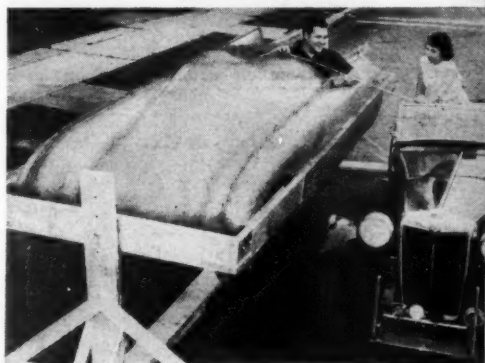
glas moldings as applied to automotive construction is John A. Wills, plastics expert. He and Ralph Roberts, an auto designer with considerable experience, teamed up to design and build a plastic body for the Crosley chassis and formed the Wilro Company. As previously mentioned, the "Skorpion" was first shown at the 1951 Motořama.

Additional publicity and exhibits quickly followed with stories appearing in magazines (see April '51 MOTOR TREND), newspapers, newsreels, and television shows across the country. By March, 1952 some 20 Skorpion body kits had been delivered to customers.

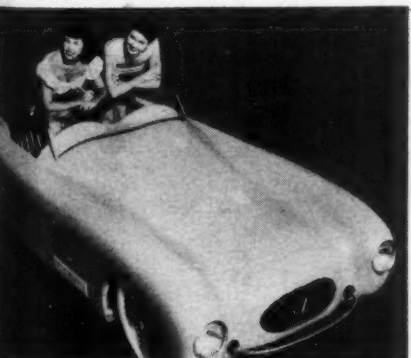
Doug Caruthers of the Vikingcraft Corporation, near Santa Ana, Calif., bought

the rights to build the Skorpion from the Wilro Company in May, and is now turning out two Skorpions—the standard body kit for 1947 through 1951 Crosley pickup, station wagon and sedan chassis, and the Super Skorpion for the Super Sports Crosley, the Renault, Morris, and other small chassis.

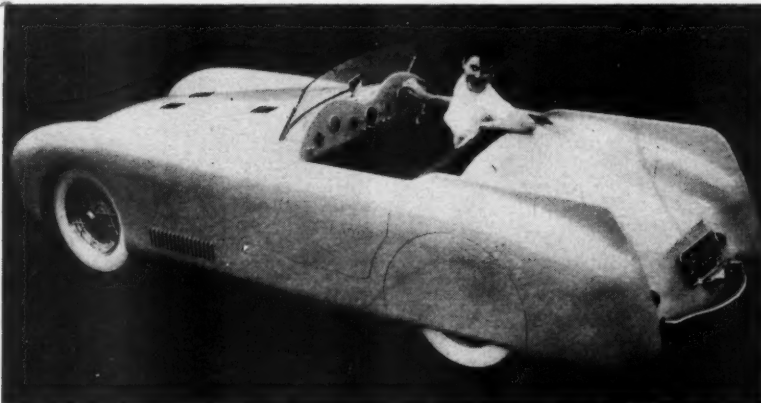
Caruthers has produced some 50 odd body kits, each kit selling for \$460.00 for the Skorpion, and \$640.00 for the Super Skorpion. This price includes all hinges and hardware. In addition, Doug has built a quarter-scale model of another contribution to the growing list of Fiberglas cars: The "Cheetah." It is a sports car with completely new lines and is designed for
(Continued on next page)



Vale Wright, artist and designer of Berkeley, Calif., has created trim body design

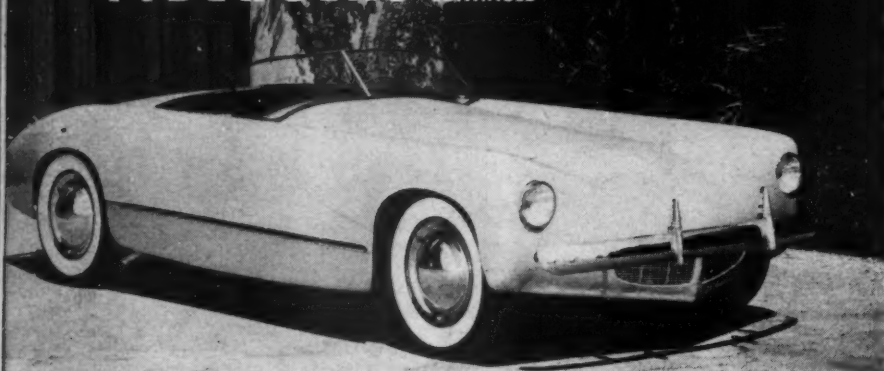


Wright's Fiberglas MG now sports a curved windshield, frenched headlights, full undercuts on body, and fender skirts



Body has knife-edge fins on rear fenders. Wright has retained MG cowl lines in dash

FIBERGLAS CONTINUED



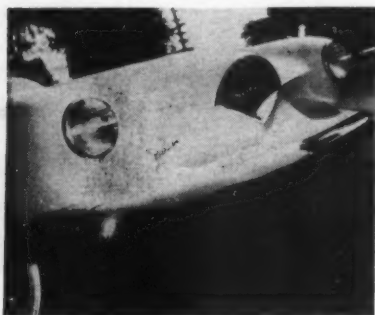
Eric Irwin's Lancer was much talked about when first shown at the 1951 Motorama show. Since then he has produced several Fiberglas bodies using the identical mold



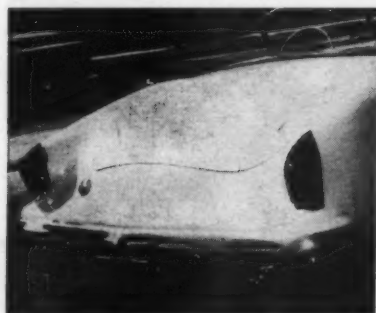
The author (right) is shown jotting down details of Irwin's plans for new Lancer



Darrin, known throughout automotive world as designer, illustrates sliding door



Grille treatment of the Darrin K-F sports car is an entirely new concept of design



Rear fender line flows into late-model Kaiser taillights which, jewel-like, accentuate rear end beauty of sports car

Twenty-eight

a modified Ford chassis. The car is expected to make its debut early in 1953.

"La Saetta" to Go Into Production

As announced in our November "Spotlight" feature, another developer of Fiberglas bodies is the Testaguzza Body Company, which recently broke ground for a new plant in Ogden, Mich.

Gino and Cesare Testaguzza, both of whom have been with various auto company styling departments for the last 15 years, have developed an idea which, it is claimed, will transform any American car into a sports car.

Pilot model of the car, called "La Saetta," is being shown in Detroit. Weighing only 175 pounds, the two-seater body is mounted on a standard Chevrolet chassis. However, the body will fit any standard car with a wheelbase between 110 and 116 inches. Only change in the body that would have to be made is in the width of the doors. The body, minus decorative trim, is expected to sell for \$1000.

The plant will go into production within two months, and output is planned for five bodies a day at the outset.

Plastic Body for an MG Chassis Created

Vale Wright, talented artist and designer of Berkeley, Calif., has created a trim Fiberglas body for an MG chassis. The pilot model was recently featured as the theme car at the International Sports Car

Show, which was held at Oakland, Calif.

Wright's Fiberglas MG now sports a curved windshield, frenched headlights, full undercuts on the body, fender skirts, and reworked MG seats. The body is trim and has knife-edge fins on the rear fenders. Wright has set up a plant and expects to turn out a complete auto body each day, selling for about \$700.

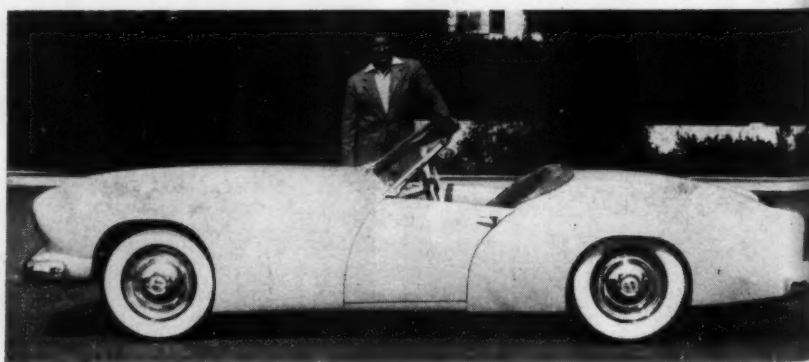
Eric Irwin's "Lancer" to be Modified

Eric Irwin of Costa Mesa, who was one of the early birds in the Fiberglas car business, is modifying the design of his original "Lancer" car shown at the 1951 Motorama to give the car improved lines.

His new "Lancer," which was shown at the 1952 Motorama, will fit any chassis from 100- to 110-inch wheelbase. While only a few "Lancers" have been completed, the seven that have are unique in that the purchasers of the bodies have mounted them on many types of chassis. One owner used a combination tubular and channel chassis and a Studebaker V-8 engine. Another used a modified 1940 Ford chassis and installed a Mercury engine with Lincoln overdrive. This car is reported to develop 180 bhp.

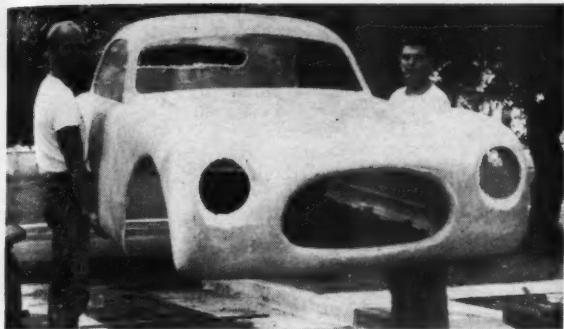
"Dutch" Darrin Designs Unique Sports Car

"Dutch" Darrin, who is known throughout the automotive world as a designer and builder of hundreds of fabulous cus-

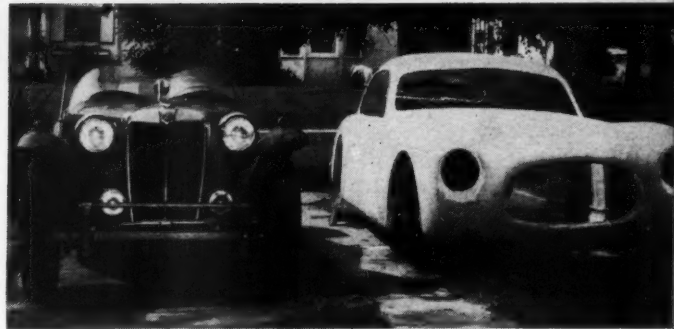


Extreme lowness of sleek Darrin sports car is shown here. Note graceful arc of door

Mo'tor Trend



Interesting feature of this Fiberglas coupe body designed for MGs is that it is rigidly reinforced with $\frac{1}{2}$ -inch steel tubing



The Atlas Fiber-Glass Company, developers of the MG coupe body, expect to build a roadster body along similar styling lines

toms for movie stars, kings, and other personages, again has built a car which could become a sensation.

Outstanding feature of the Fiberglas car, besides its smooth, extremely low lines, is its sliding doors. Because of this unusual design, the curved two-piece windshield was brought back to the normal door-hinge line and the rear fender line is given a long graceful arc appearance.

The grille treatment has been given an entirely new concept since the use of Fiberglas has enabled Darrin to make the front bumper pan to become actually a part of the body. Thus, new front end contours of exceptional beauty have been created.

The rear fender line flows into late-model, huge Kaiser taillights which, jewel-like, accentuate the rear end beauty. As in the front end, the bumper pan flows unbrokenly into the body.

The design features of the Darrin K-F sports car illustrate what can be done by an experienced designer when he is working with a material which is more flexible in its application than metal.

The Darrin K-F XP is mounted on a standard Henry J chassis with a Kaiser engine. However, when the car goes into production, it is expected that a standard Henry J engine will be used, unless otherwise specified by the customer. Body height is extremely low—only 34 inches; wheelbase is 100 inches. Pilot model of

the car was featured at the 1952 Motorama and negotiations to go into production of 2000 complete cars are, at this writing, still being worked out with the Kaiser-Frazer Motor Car Company. Price is expected to be about \$2800.

Fiberglas Coupe Body for MGs

Launching another Fiberglas project, Roy Kinch and Mickey Thompson, Jr. of Alhambra, Calif. have just completed their pilot model coupe body for the popular MGs. This is reported to be the first coupe body ever built out of Fiberglas.

Operating under the firm name of the Atlas Fiber-Glass, Inc., their car was first shown at the Motorama show. Production of the body is now under way and it is available complete with lights, instrument panel, windows, and one or two doors at a price of \$685.00. For competition use, it is expected that some buyers will prefer only the one door.

According to Kinch, who has been associated with plastics and Fiberglas for the past 12 years, the Atlas MG coupe body is rigidly reinforced with $\frac{1}{2}$ -inch steel tubing throughout. Even so, total weight of the body is under 200 pounds. Another interesting feature is that all edges of the Fiberglas material are rolled under to give the body a finished look. An air scoop in the hood may be obtained for additional cooling of the engine, if desired.

After the first of the year, Atlas plans

to build a Fiberglas roadster body for MGs along similar lines which will sell at the low figure of \$485.00. Also planned is a roadster body to fit a late-model Ford chassis; price: \$795.00.

The Frazen Fiberglas Body

Most unusual looking of the Fiberglas-bodied cars being produced is that designed by Al Weiss, Ray Greene, Bob Allison, and Bob Fox, all of Toledo, Ohio. Operating under the firm name of The Ray Greene Company, for five years builders of Fiberglas boats, the firm expects to produce one car per day, which is to increase as demand increases.

These bodies fit any 100-inch wheelbase chassis and sell for \$650.00. The completed Frazen sports car, as it is called, is mounted on a Henry J chassis and is equipped with a six-cylinder engine; priced at \$2795.00 FOB Toledo.

Other details of the car include interior trim in leather with padded dash, foam rubber seats, canvas or orlon top, or Fiberglas hardtop, and standard transmission or with overdrive. Height is 36 inches from ground to cowl with seven inches road clearance.

Other Fiberglas Projects

Other Fiberglas construction projects for automobiles that have come to the attention of MOTOR TREND include: Maver-
(Continued on page fifty-two)



The Ray Greene Company of Toledo, Ohio, designed this body

December 1952



Frazen sports car has unusual lines, fits 100-inch wheelbase

Twenty-nine



Here the Lincolns (one with '52 engine, the other with '53 engine) are lined up at the start of drag race

A day at the proving ground with the '53 LINCOLN

By Harry Cushing

LINCOLN for 1953 is ahead of the parade of American cars in the rapidly accelerating horsepower race. Powered with an engine called the V-205, it has undergone numerous mechanical changes. Stylewise, the new models are only slightly changed over last year's versions.

The improved 317 cu. in. engine to be offered the motoring world turns out 205 bhp @ 4200 rpm. Sensational performance claims are made for it by the engineers who developed it. To prove their statements, they staged a typical California drag race at the Ford Motor Company Test Track for a select group of the Detroit automotive press recently.

With a claimed top speed of 112 mph and changes in the distributor and carburetor for fast get-away, the 1953 car easily whipped its predecessor. In only 500 feet it was well ahead, while at the 1500-foot mark several car lengths separated the two performers.

Along with a higher speed, Lincoln engineers reported other surprising results of

the engine changes. Torque has been increased from 285 to 305 lb.-foot @ 1800 rpm. It was reported that acceleration in the 0-60 mph range has dropped from 16 seconds to 12 seconds and, in the 0-80 range, it has been reduced from 31 seconds to 22 seconds.

Seven major improvements contribute to the 1953 car's performance. For a rapid take-off, the Lincoln engineers developed a linkage between the distributor and carburetor which gives more rapid spark advance than previously obtainable. A two-stage, four-barrel carburetor is now utilized. Intake manifold runners have been increased from 1.56 square inches to 1.80 square inches. Parts have been increased the same proportion. Larger intake valves and a higher valve lift have been incorporated into the design, from 1.75 to 1.98 inches and from .3375 to .3545, respectively. Compression ratio is up from 7.5:1 to 8.0:1, but the engineers say only regular fuel is needed to operate the 1953 car. The idle vacuum has been increased from

16 inches HG to 17.5 inches HG. A straight-through resonance muffler is used in the exhaust system.

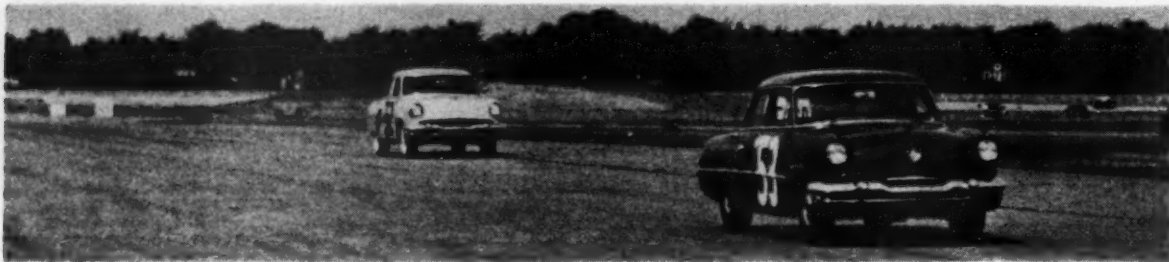
Along with the engine changes, the 1953 Lincoln offers power steering, power brakes and a unique power-operated front seat. All will be optional equipment.

The power steering unit is very similar to the General Motors device. It requires three pounds pressure before taking over, thus leaving Chrysler the only major concern with the fully operative, power-controlled device. Lincoln's unit is a Bendix development, but it is manufactured by GM's Saginaw Steering Division. With the new power steering unit the overall ratio has been decreased from 26½ to 20½. Four turns are required from lock-to-lock instead of the previous 5½.

The power braking setup enables the placement of the brake pedal to be on the same plane as the accelerator pedal, thus giving smoother, swifter and safer operation. It reduces pedal travel from six inches to 3½ inches.

Lever mounted on the base of the seat to the driver's left provide both horizontal and vertical seat adjustment. At his option, the vehicle operator may move the front seat forward as much as 4½ inches, and raise it 1½ inches.

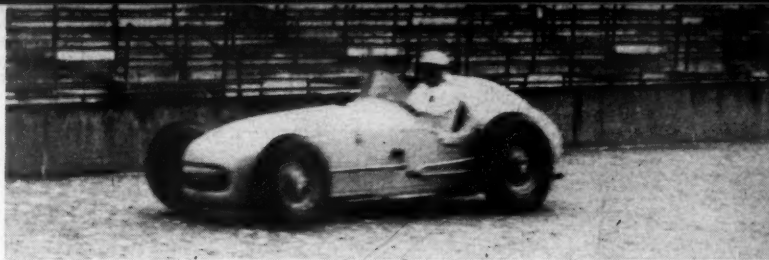
Styling of the 1953 Lincoln is virtually unchanged except for slight rearrangement of the chrome. (See "Spotlight.")



Car position at 1500 feet shows '53-engined Lincoln far out in the lead

An Eyewitness Account of Secret Tests of a Chrysler-Powered Race Car

By Harry Cushing



POTENT THREAT for INDIANAPOLIS

NOTE: MOTOR TREND's Detroit Editor, Harry Cushing, was privileged to witness one of the test runs of a race car which is a real contender for next year's Indianapolis 500. He was the only automotive news magazine reporter to join a special party of Chrysler engineers which saw the car in action. In effect, therefore, this first-hand report of a development which may revolutionize Indianapolis racing is a MOTOR TREND first.—Editor

THE EYES and ears of America's big-car racing fraternity have been turned to Indianapolis this fall. Over the rough road of the asphalt and brick oval a souped-up passenger car engine mounted in an Indy chassis has been chalking up sensational news.

The engine is a potent Chrysler V-8 "FirePower." Reworked to produce 404 bhp @ 5200 rpm, installed in a Kurtis-Kraft carriage, it has turned the famed speedway at a 137 mph clip for a single lap, while hitting 170 mph on the straightaways. These and numerous other marks were unofficially recorded during a series of sustained driving tests in October, just before the course closed for the winter.

In a two-week period, the car was driven 200 laps at an average speed of 134.35 mph. This is a distance equivalent to a complete "500-mile Race," and indicated to the test crews that the Chrysler engine could compete in the big event without falling apart.

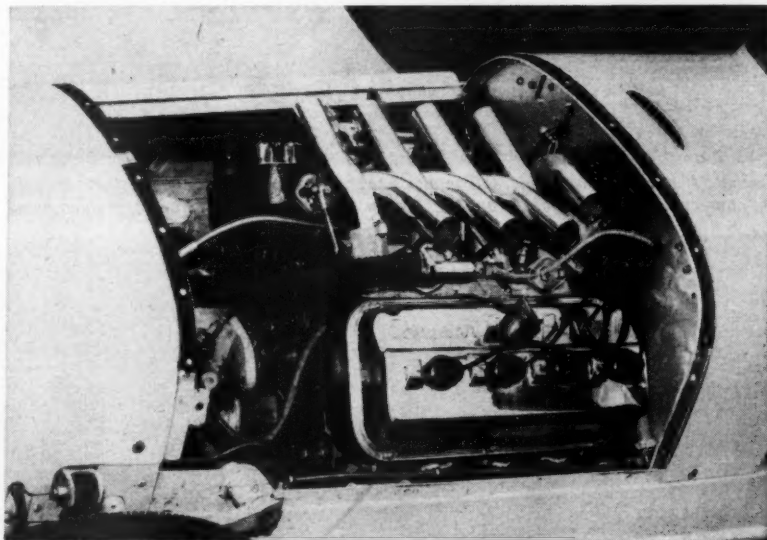
During this experiment, an intensive two-day session was run in which 56 laps were completed at an average speed of 135.02 mph. This is the longest and fastest any car has ever been driven at the speedway, track observers say. In two other runs 61 laps were charted @ 134.09 mph and 44 laps were finished @ 134.68 mph.

To the drivers, mechanics, and engineers who witnessed the trials this job can hold its own with top Indianapolis race cars. Under a ruling made last year by the technical committee of the AAA, semi-stock cars up to 335.5 cubic inch displacement may enter the classic event. The Chrysler engine displaces 331 cubic inches.

(Continued on page fifty-five)



This Kurtis-Kraft car, powered by a potent 404-bhp Chrysler V-8 engine, turned 137 mph for a single lap at famed speedway. In a two-week period, car was driven 200 laps



Chrysler Corporation did engine modification which includes a Hilborn-Travers fuel injection system, replacing four carburetors. A Vertex Scintilla magneto is ignition

WHAT IS T

One of the nation's top customizers is interviewed to give you first-hand information on various customizing operations

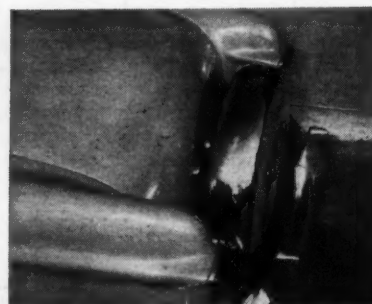
By Nick Alexander

NOTE: In the following article, the author makes a visit to one of the most popular custom shops in the country. Here, at the Barris Kustom Shop, he was on assignment to find out what had been done to our cover custom for this month. While there, he uncovered some extremely interesting facts about customizing costs. For one thing he found out that a custom car could cost anywhere from \$500 to \$10,000, depending on your own whims. Secondly, these costs are not arbitrary costs but figures based on parts and labor involved, as is any mechanical work. Thirdly, these prices are quite general throughout the country, with the possible exception of the east coast. But, go on with the story. You'll find out how much it costs to have your nose decked, your hood filled, your headlights frenched.

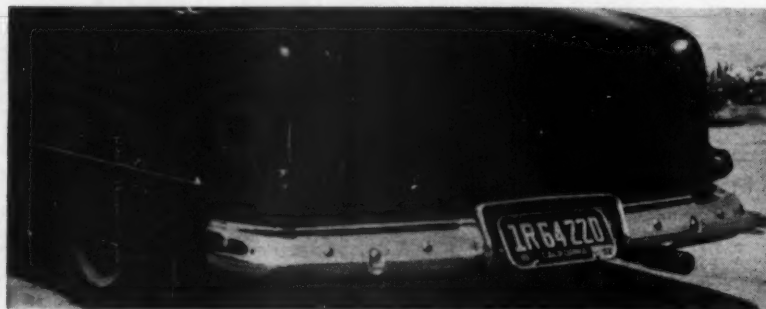
—Editor



Voilante's '49 Ford convertible, this month's cover custom. Professional customizers call it "conservative restyle" job. It has pushbutton doors, frenched headlights, molded hood

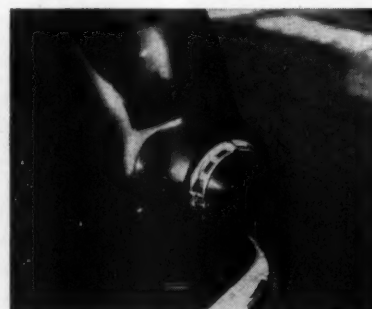


Rear fenders have been lengthened with creases and rear pan molded into one piece



This custom has countersunk-type frenched funnel taillight lenses from '50 Olds 88. The unit is fitted into the rear fender. Lights and lenses are removable from rear body panel

Thirty-two



This countersunk taillight is molded solid into fender panel. Light from '51 Olds 98

Motor Trend

THE COST OF CUSTOMIZING?

Photos by Rickman, Campbell

SCENE: The Barris Kustom Shop in Lynwood, California. Nick Alexander has just walked in, introduced himself as representing MOTOR TREND magazine. George Barris lays down his acetylene torch, shakes hands. They lean against the fender of one of the four cars in the shop, each in various stages of customizing.

NICK: George, my editor tells me that one of your cars is going to be featured on the cover of MOTOR TREND. He wants me to find out what it cost.

GEORGE: That's Voilante's '49 Ford convert, isn't it? I did that for \$1200.

NICK: Twelve hundred bucks! Wow! Where did all the money go?

GEORGE: Actually, that's not too much for a custom. One like this, what professional customizers call a "conservative restyle," generally runs between \$300 and \$1500. It's the cheapest of the lot.

NICK: You mean there are cars that cost more?

GEORGE: Sure, but don't forget what you're getting for your money. Besides having a car that's different, you get a car that's had a lot of work done to it. Take Voilante's car, for example—

NICK: I'd like to.

GEORGE: —it's been frame-channelled, has pushbutton doors, frenched headlights,

molded hood, straight bar and grille with floating wings, lengthened-out rear fenders with the creases and rear pan molded into one piece, a continental tire, new bumpers, and a completely new paint job.

NICK: Okay, so you've convinced me. But, there are two things that really intrigue me. What are the prices of some of these other customs and do you have an individual breakdown of the various customizing features?

GEORGE: Your first question is easy, but your second one is going to take a lot of time to answer.

NICK: That's okay, I've got nothing but time, if you can spare it.

GEORGE: I don't mind. There's only one thing I like better than building customs, and that's to talk about them. The two other types of customs are the "radical restyles" and the "complete customs." Radicals run around \$2500, while complete jobs are from \$5000 to \$10,000.

NICK: I see what you meant by "cheap." It was only relatively speaking. Now, what about breaking down some of the costs?

GEORGE: We may as well start where most customers start, by dechroming the car. This ranges from \$50 to a complete dechrome at \$300. You can get a hood de-

chromed for \$25, if you just want the emblem removed and have a ½-inch bead carried down the center. A hood welded solid to the center with a sharp "V" peak ranges from \$50 to \$55. A peak ridge hood, where you lead a complete ridge down the center and flare it into the grille piece, runs \$65. Complete molding of the hood, using power hammers and no lead, runs \$125. Dechroming of the body side runs \$25 to \$30, depending on the hole size.

NICK: You mean the holes where the chrome was fastened through?

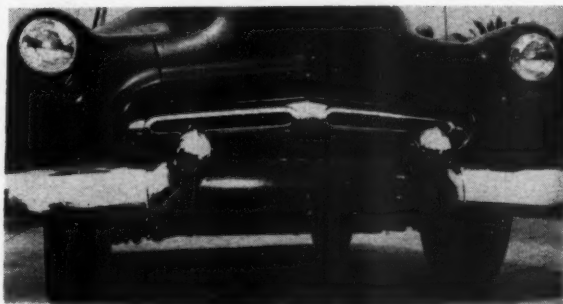
GEORGE: Yes, there are different sizes from ⅜-inch to ½-inch or larger. Countersinking, brazing and working out a ⅜-inch or ½-inch hole runs 75 cents, a ¾-inch hole is \$1, and ½-inch or larger hole runs \$1.50.

NICK: What about the turtledeck?

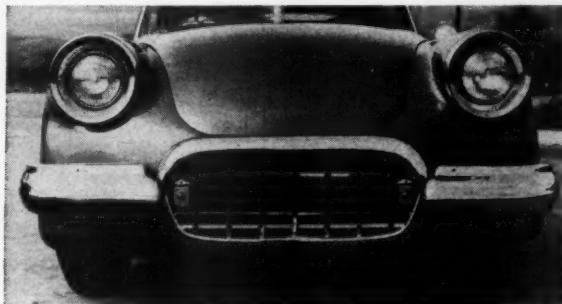
GEORGE: Shaving the deck generally runs \$18 to \$20. Late model Fords, Plymouths, and early Kaisers all have a ridge under the license plates. You have to work this out, so these cost more, around \$30 or \$35.

NICK: You'll need some type of release then. What do they cost?

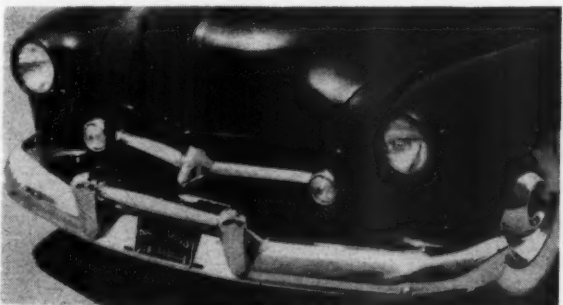
GEORGE: The cheapest is the cable
(Continued on next page)



Floating two-piece bumper is independently attached to frame horns. Oval space is inserted with reworked straight bars



Another type of floating bumper is used on this unusual Muntz custom convertible. Car was featured in July Motor Trend



This jet-oval grille has a large tunnel protruding deep into fenders, pan, and hood. Unit is one piece, curving into oval



Front fenders of this custom extend five inches with large jet-oval hole fading into radiator section. Grille is from '51 DeSoto



Two '41 Fords lowered by body channeling (left), frame channeling (right). Body channeling done by cutting body loose from frame, dropping below frame rails. Frame channeling consists of C-ing frame rails, lowering front end to get body closer to ground

catch, \$12 for the hood, \$15 for the deck. Then comes the electric solenoid pull catch at \$25 and the electric screwjack or hydraulic cylinder jack from \$40 to \$50.

NICK: What about these solid-type headlights?

GEORGE: You mean "frenched" headlights, where the rim is molded solid into the fender so you don't see a crease. This generally runs \$25 per fender, plus the cost of the headlight rim, if you use a special rim. The kinds that are used are a small rim, flush with the bulb unit; a rim that has an inside chrome rim where the bulb unit is recessed two inches; and a two-inch rim with a top shade. Parts cost usually don't go over \$10 or \$15.

NICK: I understand there are several types and methods of installing push-button door handles. Do the prices vary?

GEORGE: No. Generally, doors, push-button controlled, are all one price, \$75 a pair. This is complete with buttons, wir-

ing, lockbuttons and installation. Inside buttons can be controlled from the dash, the floor or the door panel. The outside button can consist of a lock-type button inserted in the chrome, in the door panels or on top of the door railings. The only extra cost is \$10 per side for molding the door handle on the outside of the door.

NICK: What about taillight relocation? Does this depend on the type of taillights you want and where you place them?

GEORGE: Yes. Taillight relocation, generally speaking, varies at about \$45 a side. Of course, you can have a rim type, or Pontiac taillight, installed in the body panel, which costs only \$5 to \$7. If you want to build up flares from the later-type taillights, frenching them into the fender or body panel, this runs \$45 to \$50 for a side.

NICK: What would it cost to have Cadillac fins installed on a car?

GEORGE: To add fins on a Chevrolet or Pontiac or, in other words, any type that follows the same body line, will cost \$100 a side. This includes molding the fender in, changing the gas filler neck into the taillight, leading into the body panel and molding it into one piece. The only extras are the taillights themselves, which run \$25 each.

NICK: What would it cost to install a complete Cadillac fender on something like a Pontiac or an Olds?

GEORGE: Complete Cadillac fender assemblies, from 1950 up, cost \$300. This includes the complete rear end, with bumper, bumper pan and shifting of the fenders. These can also be installed on a '49 Chev or early-type Buick for the same price.

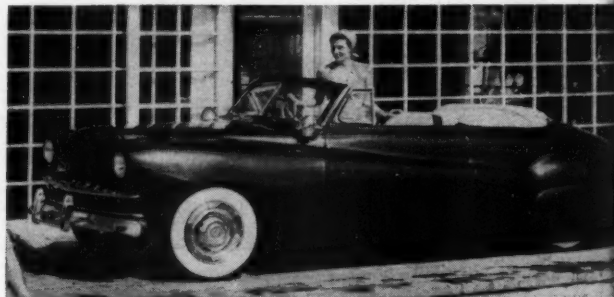
NICK: Are there any other type taillights that are popular now?

GEORGE: One popular type is the Oldsmobile, which you can have installed on a Chev or Pontiac for \$100 a side. Incidentally, taillights are getting more radical. We have a new countersunk-type frenched taillight that has grown into popularity. The rim is made from steel or round stock, molded into the fender or body panel to give it a completely different look. The legal taillight lenses are taken from any type model car, countersunk and set into the back of the frenched unit. Prices on these vary from \$45 to \$65 a side.

NICK: What about bumper changes? If you wanted to put a Cadillac bumper on a Chev or Olds, or put a Lincoln bumper on a Ford, what would it cost?



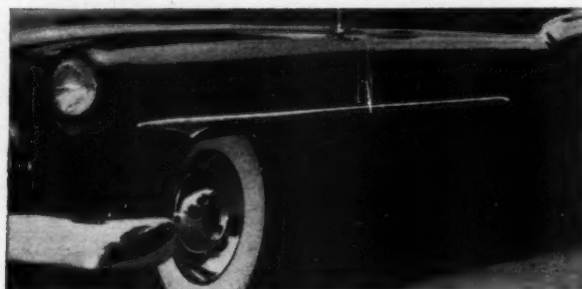
Early model short-type fadeaways extend, fadeaway into door panel on two-door '41 Ford sedan. Bottom is rolled underneath



Late type fadeaways are formed to body. Fadeaway extends fully from front fender to rear fender and is molded into doors, panels



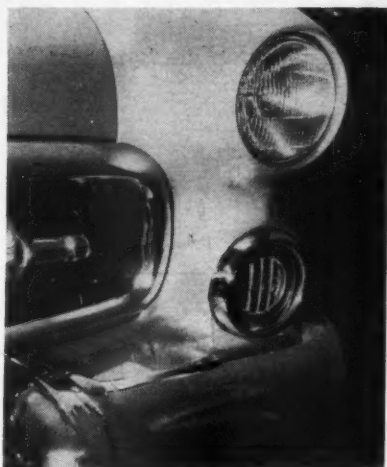
The Buick spear used on this Mercury completely changes the car's lines. Repositioning chrome is newest custom technique



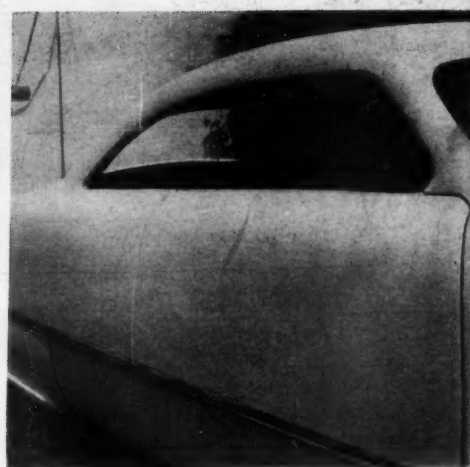
This spearhead chrome is from a '51 Packard 300 fitted on a '51 Olds. Key-lock electric pushbuttons are in door chrome



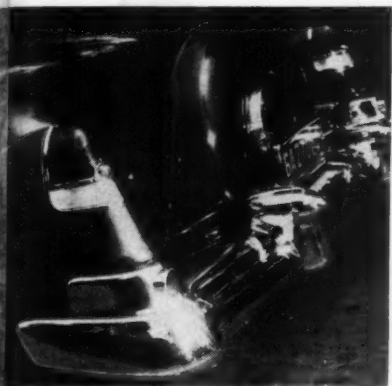
Rear fender airscoop allows air to pass through a tunnel either for cooling of rear brakes or for air conditioning unit



Front airscoop has a large vent tunnel for cooling of front brakes or for direct ventilation to inside of car. Scoop is handmade



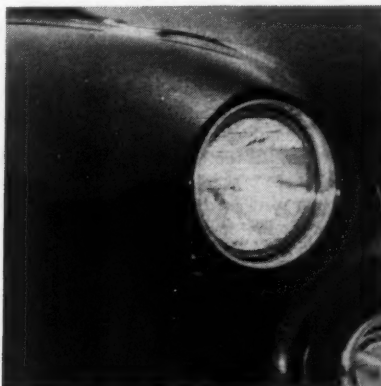
To simulate a hardtop convertible, door posts and quarter panel posts are welded into top. Center door, panel posts removed



Continental tire is mounted into splash pan with fenders extended to bumper edge



Latest custom innovation is this frenched headlight and parking light combination



More common is this frenched headlight with a two-inch inset of chrome filler

GEORGE: Bumper changes generally run around \$20. That is, if cutting isn't necessary and if it can be fitted properly. If cutting of the brackets is necessary and you have to cut anything on the bumper, it runs about \$40, plus the chrome work on the bumper, which takes it up another \$15 or \$20. This, of course, doesn't include the original price of the bumper.

NICK: What other types of bumpers can you install?

GEORGE: One type that's getting quite popular is the two-piece floating bumper. Bumpers are attached by tubes that are released by one set-screw, with two independent pieces extending around the fenders and body panel, leaving the front open allowing a complete view of the grille. A full belly pan is then attached to the grille to cover up the space in the center of the bumper. The price of this runs \$50 to \$75, plus cost of material and parts.

NICK: Are minor grille changes very expensive?

GEORGE: Depends on what you want. To add a straight grille bar runs from \$30

to \$45 for parts and labor. Installing a Meteor (Canadian Ford) grille is \$25 in a '51 Ford, with the braces an extra \$5. The floating-type grille costs \$65 for labor, plus the type of material you use. The molding of the shell assembly is extra.

NICK: Are there other variations in grilles, like removing a bar or adding a couple?

GEORGE: You can add and subtract grille bars to your heart's desire. One main horizontal bar and three or four vertical bars runs \$20 labor, plus \$10 to \$15 material. It costs around \$5 to \$10 for removing some types of bars, filling in a couple of holes where they were previously mounted.

NICK: Is it expensive to take a grille from another car and make it fit your car?

GEORGE: If you were to take a Cadillac grille, for example, and install it in a Ford or Chevy, the cutting and fitting of the grille to fit your car, your hood, your fenders and pan assembly would run \$95 labor. The grille ranges from \$25 to \$45, with the chrome work extra.

NICK: What about reforming the front section of the car to conform to a new grille?

GEORGE: One of the most popular types now is the jet-oval, solid front end that's flared into the pan, with the shell and grille assembly all in one piece. The complete outside metal work of molding the pan, the front fenders, the tubing and the hood into one piece runs \$125. The labor to install the floating grille is between \$25 and \$65, depending on the type of grille used. These grilles are mounted in springs and rubbers, with inside back braces, fitted with either parking lights, straight bar assemblies or complete grille changes, made with taking the grille bars and changing them around in different contours to fit the oval of the grille.

NICK: About how much does it cost to lower a car?

GEORGE: It depends on the method you use. Heating or cutting coil springs, either front or rear, without removing the springs from the car, runs \$6 to \$10. Low-

(Continued on page forty-six)



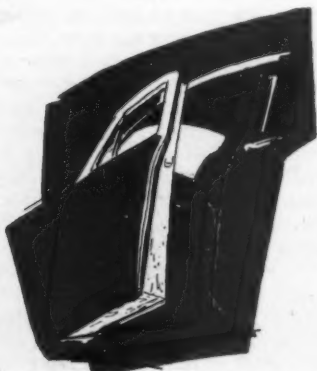
Illustrations by Chuck Doe

THE APPROACH of winter with its long cold nights will likely find you automatically turning up the furnace and putting an extra blanket or two on the bed; but what about your car? Its preparation to combat the effects of cold weather are of equal importance, if embarrassment and inconvenience are to be avoided. In the following paragraphs, MOTOR TREND points out things you should do in order to give your car trouble-free winter operation.

UNDERSEAL

Fenders, doors, and lower body sills are subjected to continual attack by rust and corrosion from dampness and road salt. An underseal applied at this time will aid in eliminating this condition as well as many minor squeaks and rattles. An added benefit in the use of underseal for winter operation is that it affords additional insulation to the car body.

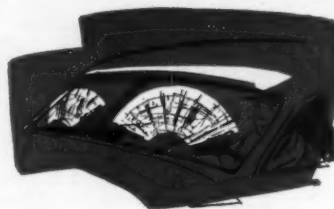
Annoying drafts from door or window seals can usually be found on cars that are a few years old. Little time or labor is required to replace defective seals. This will more than pay for the effort expended in keeping the interior of your car warm.



Thirty-six

WINDSHIELD WIPERS

Windshield wipers, usually forgotten during the summer months, will be called upon for peak performance in the winter. Heat and infrequent use will find them with a permanent set. In this condition they will smear the windshield. Check new blades for correct contact with the glass and for sufficient pressure to clear away snow and sleet. Be sure that the motor is clean and oiled and hose is in good condition. Most cars have a combination fuel-vacuum booster pump. This pump, in conjunction with manifold vacuum, assures



proper windshield wiper operation. If your wiper operates at less than 80 strokes per minute, the booster pump may be at fault. Oil in the line between intake manifold and booster pump indicates a damaged diaphragm. This condition will make the engine idle rough, acting as an air leak in the intake manifold. If your car has a windshield washer, add some antifreeze to the water to avoid freezing.

CARBURETOR

Most of the carburetors in use on today's cars are equipped with an automatic choke. Many of these have a manually set climatic control, and as it is a mechanical device, it will require attention and adjustment, from time to time. It provides a means of adjusting the fuel mixture by changing the operating period of the choke control mechanism. Adjustments can be made between rich and lean. It should be

PREPARING

Here are some helpful hints to keep your car in trouble-free winter operation

By Bob Hoepfner

set to obtain proper fuel mixtures for cold starting. Correct operation of the choke will depend on occasional cleaning of the linkage and removing dirt and fuel residues that hamper its operation.

The freezing of moisture or water in the gas tank, lines, or carburetor, can be annoying and hard to cope with. Chemical compounds are available which will absorb the water and prevent freezing. A small amount in the gas tank will eliminate trouble from this source.



COOLING SYSTEM

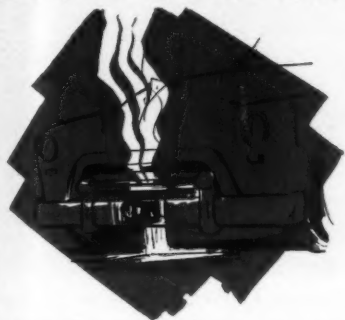
The preparation of the cooling system should include much more than draining the radiator and adding anti-freeze, as many of these solutions contain alcohol, which has a tendency to leak where water will not. The radiator should be checked for leaks due to engine vibration and road shock; these usually appear at the seams or hose fittings. The effects of heat and water will eventually require replacement of the radiator and heater hose due to cracking, hardening, and rotting. Deterioration is more evident on the inside, and a few turns of a screwdriver will allow inspection for interior swelling or flaking. Hose found in this condition should be replaced, as the



Motor Trend

YOUR CAR FOR WINTER

flakes of rubber may deposit themselves in the radiator tubes, restricting water flow. Thermostat operation should be checked; as a general rule they will open somewhere between 140° and 180° F. If the valve fails to open in time, the engine will over-



heat and damage may result. A valve that remains open will require considerable time to warm up the engine, and operating temperature will be below that required for good performance. Other points which may leak with the addition of anti-freeze, and should be checked at this time are: the head gaskets, water pump shaft, and freeze plugs. Failure to do this may result in the loss of expensive anti-freeze, which in turn will cause engine overheating and possible damage. Loss of coolant at the head gasket, to the outside of the engine, is not as serious as it would be entering the combustion chamber. This could cause loss of lubrication in the cylinder area, increasing wear of pistons, rings, and scoring of cylinder walls. The alcohol blends of anti-freeze have a boiling point considerably below that of water. Frequent hydrometer tests should be made to prevent damage due to its loss.

The fan belt usually has a distinct influence on the cooling as well as electrical system of your car. Their operation is dependent on proper tension of the fan belt. A slack of $\frac{3}{4}$ to 1 inch between pulleys will require tightening. If the belt is found frayed or worn, replace it.

TIRES

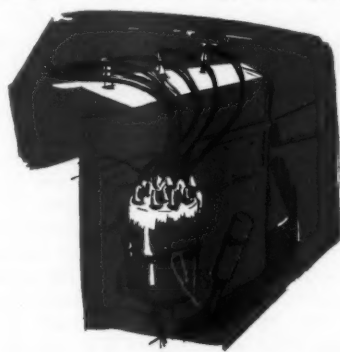
Tires are available with tread patterns designed for winter operation. They will aid in giving better traction on slippery ice or snow-covered roads. Caution must still be used, as they will never allow you



to drive as you would on dry roads. Conditions under which these tires must operate will vary greatly. In a short time you may encounter loosely packed or hard packed snow, smooth or rough ice. Under certain of these conditions they will show a definite improvement over regular tires, but they are no better under other conditions, and in some cases even worse. The overall improvement will not warrant less caution being used in driving on slippery roads. The variation in tires is in the tread design. Some contain small particles embedded in, or fine cuts in the tread pattern, which is of conventional design. Another has a special tread composed of deep blocks, studs, or knobs. A third type combines features of the other two. No one type is outstanding in its performance. One may give better traction in packed snow but fail to give equal traction to another type on glare ice. All will give varying performance according to conditions.

ELECTRICAL

When the thermometer is down to 20° F., the work a fully charged battery can produce is reduced by approximately 50 per cent. In fact, batteries will freeze at temperatures above zero, if under-charged. Your car's electrical system



should therefore be in top condition to obtain quick easy starting. Battery cable terminals should be clean and tight to reduce resistance. The ignition system should be in proper adjustment. Check the distributor cap for cracks and replace if found, as they will admit moisture. Ignition wires should be free of dirt and grease. Cracks of any kind are cause for replacement. Winter will find you doing more after-dark-driving, many times at reduced visibility because of rain, snow, or fog. Headlights should be given a visual check for proper operation on both high and low beams; check parking, tail, and stop lights. Sealed beam headlights can lose power gradually without the driver being aware of it. It is wise to check and replace them, if they are not up to par.



STEERING SYSTEM

Front wheel alignment, suspension, and steering system should be checked and put in proper condition to combat the strains imposed by icy snow-rutted roads. Excess play in the steering wheel is a sign that adjustments should be made. The gearbox may require adjustment; excessive wear can mean replacing tie rod or drag link ends. Rocking the front wheels (with the front end on a jack) is the best way of checking for play at kingpins or wheel bearings. Improper tire wear may be due to a front end in need of repair.

CHAINS

When the going begins to get rough, even the best of winter tires will not give you the traction or safety provided by a good pair of chains. Best by far are the reinforced type identified by a bar welded to the center group of links of each cross chain. These give improved traction and stopping ability over the regular type. The added material in crossbars will lengthen life expectancy.

EXHAUST SYSTEM

Leaks of any kind in the exhaust system that may allow carbon monoxide to enter the car can be dangerous, especially during the winter months, as ventilation is generally inadequate in an attempt to keep interiors warm. Periodic inspection of the exhaust system should be made to prevent this danger. Backing into a bank of ice or hard packed snow (which is easy to do at this time of year) may loosen a joint, rupture a pipe that has lost its strength from corrosive action, or pinch the outlet, causing excessive back pressure. Any sign of a leak should be repaired immediately as a personal safety measure.



CONTINUED ON
PAGE FIFTY-FIVE

THE RED HOT STEAMERS

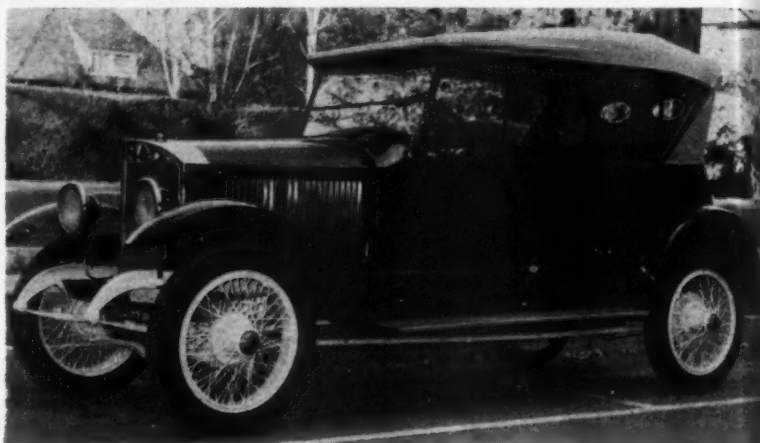
The era of the Whistlin' Billies is past, but steam exponents live on

By Robert J. Gottlieb

THE MOST controversial mode of transportation devised by man has been the steam car. Volumes have been written extolling the virtues of steam, with a similar amount of material denouncing its utility. Steam exponents, though vehement in praise, treat the subject the same as they treat the weather; everyone talks, but little is done about it. To the uninitiated, the facts and fiction pertaining to steam are hopelessly interwoven. One frequently hears that steam cars had a rather annoying habit of exploding every so often. It is also generally stated that no man ever lived who fully opened the throttle of a steam car. This makes interesting shop talk, but—don't you believe it!

The Whistling Billies (as steamers were called in days gone by) have an interesting history, especially astounding as a result of their sudden decline. There is no dispute as to whether steam or gas was first used as a means of motivation. Between 1760 and 1770, Nicolas Cugnot designed and built three steam wagons in France. In America, Oliver Evans constructed a steam car in 1787. The list of steamers, prior to the advent of the gas car, is far from microscopic.

The Gurney steam carriage existed in 1824, the Hancock steam omnibus in 1839, the Austin in 1863, and the Ransome in 1870, to name a few. In 1833, a steam bus actually conveyed its 44 passengers at a speed of 14 miles per hour between Birmingham and London on a regular run. By 1900, steam cars outsold and out-performed the gasoline car and it was



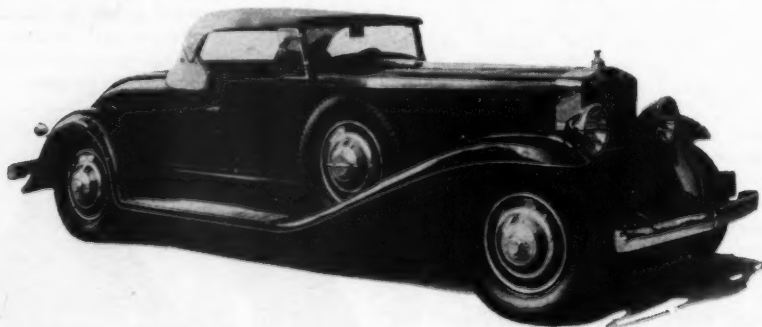
This 1918 Stanley Steamer was equipped at factory with an electric pilot heater which replaced Presto-lite torch. Car is a fine example of only model with a V condenser

not until 1908 that gasoline car registrations, for the first time, outnumbered steam-driven vehicles.

Steamers were victorious in almost all the early races and hillclimbs, and were responsible for the establishment of many early speed records. In 1906, Fred Marriott became the first man to travel at a speed of more than two miles a minute when he established a world's record of 127.66 mph in a specially constructed Stanley racer. This record stood for four years, until Barney Oldfield broke it by driving his 200-horsepower Benz a mile in 27.33 seconds. At that, the record books would have been written differently but for an unusual accident. In 1907, Marriott attempted to better his existing record and was driving the same steamer at a speed estimated to be 190 miles per hour. His steam pressure was about 1000 pounds per square inch. A dip in the contour of the earth caused the front wheels to leave the ground. The bottom of the racer was boarded flat which caused it to sail into the air and become airborne. When it

finally landed, it broke in two, seriously injuring the driver, but fortunately Marriott recovered and is alive today.

After a firm beginning, the steamer failed to keep pace with the gas car, despite the fact that the steamer had no gears to shift, no clutch, no starter, no ignition system, an engine with only 17 moving parts and a total of only 37 moving parts in the entire car. These advantages in steam-driven automobiles have never been equalled in the gas car. The gas-driven car depends on speed of rotation commonly referred to as revolutions per minute to develop power. In brief, the engine cannot develop torque unless the engine is turning at a high rate of speed. Its maximum power is delivered at a given rotational speed, above and below which, horsepower rapidly disappears. Its lack of flexibility is overcome by means of gears, drive train, and clutch. The steamer exerts almost the same torque from one mile an hour to maximum speed. Stored energy, in the form of steam, permits the car to start from a dead stop in the middle of a steep hill. It develops tremendous acceleration and constant power, yet is vibrationless and quiet. The pistons run cool and at an almost constant temperature so clearances are easily maintained. Sliding valves admit steam to both sides of its double-acting pistons so each stroke is a power stroke. Four cylinder torque is obtained from a one-cylinder engine, and a two-cylinder engine exerts almost continuous driving power. In addition, piston pressure is accomplished by means of expansion of the steam instead of an explosion of gas vapor, eliminating the necessity for a flywheel. Another great advantage is the adaptability of the steam engine for installation in various parts of a motor vehicle.



The luxurious convertible is a Doble steam car. Doble, a gifted engineer, built many of the finest steam vehicles. Body was by coachbuilder Murphy of Pasadena, Calif.

Thirty-eight

Motor Trend

Early White steamers had the engines under the hood. Other manufacturers mounted the engine under the seats and in the center of the car. The engine in the famous Stanley Steamer was mounted on and geared directly to the rear axle. The crankshaft incorporated a large gear known as an engine gear which was meshed directly to the rear axle gear. To reverse the automobile, the flow of steam to the engine was reversed, which reversed the rotation of the engine, thus backing the car.

Early steamers were seriously hampered by water-feeding problems, numerous gauges, burner and boiler trouble, defective fusible plugs, and complicated automatic valves and pumps. In addition, the long waiting period necessary to "fire up" and the time consumed in "blowing down the boiler" at the end of a run were necessary evils, each of which helped with a spadeful of dirt in the preparation of the

to escape into the air and mileage was very poor. Condensers (radiators, to you) were utilized in later models. These permitted air to circulate around the exhaust steam which condensed it back to water and it was used again in the engine. Naturally mileage improved, but not enough. In operation, the exhaust steam entered the condenser, was forced downward by incoming steam, was condensed to water by the cool air and returned to the main water supply. Originally the majority of steamers were equipped with fire or water tube boilers. These boilers maintained a steam reserve which powered the car. They were deficient in that a waiting period was necessary to generate steam although, once it was generated, careful operation of the car permitted driving until the water supply was exhausted. On overnight stops, the pilot light maintained sufficient pressure so the car could be driven immediately the following day. Many owners removed the water-tube boilers and installed flash boilers, which generated only the amount of steam required to drive the car. No waiting period was necessary with this type of boiler, but there was never a steam reserve and the operation of the car was limited by the output of the boiler.

Our feature car this month is a 1918 short-coupled, four-passenger Stanley steamer. It is a fine example of the only model made with a V-condenser and nickel-plated tank. Its original sale price was \$3300, the optional wire wheels costing an additional \$100. The engine is rated at 20 horsepower and has a four-inch bore and a five-inch stroke. As was usual with Stanley cars, the engine is geared directly to the rear axle at a ratio of 1½ to 1.

The car is owned by Sanford Ballou of Ontario, Calif. It was purchased by him in 1950 and was formerly owned by Edgar Bergen, a famous name as a result of the efforts of one Charlie McCarthy. Ballou painted, re-upholstered and plated the car and installed a new top and new tires. A major overhaul was unnecessary but the car has given its owner boiler, burner, and fuel system trouble. The wheelbase is 130 inches and the tread 56 inches. Tire size is 35 x 4½ and the brakes are 14 inches in diameter and two inches wide.

The fire in a steamer burns intermittently and turns off and on as the steam pressure rises and falls. In the feature car, it shuts off at 500 pounds per square inch and comes on at 400 psi. If the fuel does not vaporize well when the fire starts, raw fuel squirts into the burner which causes a roaring noise. It is then necessary for the owner to turn off the fuel and wait for the fire to burn out at the nozzle, a most irritating occurrence.

The car gives approximately 10 miles per gallon of kerosene and about two miles per gallon of water. Firing up is very complicated and takes from 15 to 20 minutes.

(Continued on page forty-two)

Here is what might be considered one of first sports cars—a 1911 Stanley Steamer

steamer's grave. Firing up took anywhere from 10 to 25 minutes, depending on the car and on the driver. It was necessary for the operator to fuss with pilot lights, fuel oil, water, pumps, and sundry gadgets. Manufacturers encountered difficulties stylewise due to the bulk of the boilers.

Mileage per gallon of fuel, whether kerosene or gasoline, was a variable factor, as was the mileage achieved from each load of water. Existing weather conditions, the terrain and the speed at which the car was driven, all affected the distance travelled before refueling was necessary. The first steamers permitted the exhaust steam

Another famous name in steam is White

December 1952

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Thirty-nine

COP-SIL-LOY

*Tests indicate that advertised claims for
this new product are not extravagant*

An MT Research Report by Bob Hoepfner

Photos by Eric Rickman

SAFETY IS A PROBLEM in which all of us are, or should be, extremely interested. That's why we of the MOTOR TREND Research staff are happy to provide our readers with the results of brake tests (conducted in conjunction with the Abbott-Kiple Co., Distributors) of a new aid to improve brakes—Cop-Sil-Loy.

This product, a copper-lead compound suspended in an adhesive vehicle, is brush-coated on the brake linings (either by a garage or in your own backyard) for the purpose of improving resistance to fade, overheating, and drum scoring. Being able to perform these characteristics, it should increase brake life.

During severe braking action, temperatures of 1500° F. may be reached on the brake drum and lining friction surfaces. If these excessive temperatures can be reduced, a definite improvement in life expectancy of the lining, as well as its frictional stability, may be anticipated.

During the "bedding-in" period, the copper-lead compound of Cop-Sil-Loy impregnates the lining as well as the porous friction face of the brake drums, improving the surface smoothness of the drums. The good conductivity of copper results in the ability to dissipate heat more rapidly from the friction face into the drum material, which tends to lower face operating temperatures.

According to a laboratory test report, results indicate that a reduction in fragmentation (the flaking-off of drum surface particles) by approximately 50 per cent is another factor that will increase lining life. This fragmentation reduction is accomplished by the fact that the copper-lead alloy is deposited in the surface of the brake drums. Fragmentation is one of the major causes of lining wear, as these small cast iron flakes form an abrasive dust that imbeds itself in the lining and accelerates the wear rate of both drums and lining.

The absence of "fade" in brakes treated with Cop-Sil-Loy is presumed to be because of lower friction surface temperatures. This is because of good heat transfer characteristics and the ability of Cop-Sil-Loy to maintain an absolute low limit

of friction coefficient beyond which it will not drop. Laboratory tests indicate that Cop-Sil-Loy maintains fairly consistent frictions at temperatures up to 900° F., which is in the destructive range for most brake linings; thus, it prevents the reduction of friction below a safe point and also acts as a stabilizer. Brakes that have the annoying tendency to "pull over," first to one side and then the other, or to the same side repeatedly, have been traced to the erratic action of brake linings undergoing changes in temperature and friction coefficient. Brakes treated with this new product show a definite improvement in this condition. However, the manufacturer does not claim that Cop-Sil-Loy will correct a consistent pull where friction coefficient of various wheels differs prior to treatment.

We found the single Cop-Sil-Loy treatment easy to apply, requiring approximately an hour and a half to remove the brake drums, rough up the linings, and apply a thin, even coat of the compound and then reinstall wheels and drums. "Bedding-in" of the copper-lead alloy is accomplished by taking the car out and driving it. You apply the brakes gently off and on for the first mile, then progressively increase the amount of application for the next mile or two, at which time the brakes should be quite hot. Allow them to cool off and your "bedding-in" is complete. The brakes are now ready for as much punishment as you wish to give them. If your pedal is too hard, or there is a pull to either side, "bedding-in" is incomplete and should be repeated, using the brakes severely.

Our test of braking ability and fade under conditions similar to, but more severe than the average driver will encounter, consisted of as many stops as could be obtained in the shortest time from 70 mph before complete fade was encountered. We then compared results with the same car after applying Cop-Sil-Loy. All stops were made as fast as possible without locking wheels. Stopping distances for both tests were approximately the same until fade and erratic pull were experienced



The treatment of brakes with Cop-Sil-Loy is a simple operation requiring only one application, whether lining is new or old



Here a measurement is being taken with a micrometer to determine amount of brake lining wear on the accessory trial test car

with the untreated brakes on the fourth stop.

The test car was a 1951 Mercury with a new brake reline job. Top quality, dry mix, full molded lining was used.

This lining is a brand generally accepted as having excellent anti-fading characteristics. After four fast stops, the untreated brakes became somewhat erratic, pulling to one side or the other, accompanied by some loss of pedal. During the ninth stop, a full fade condition was encountered: with the pedal more than half gone and full pressure applied, the brakes did little towards slowing the car.

After a cooling-off period, the brakes were treated with Cop-Sil-Loy and "bedded-in." Considerable heat is generated in this operation and, to make conditions equal, brakes were again allowed to cool

before duplicating the test. We were able to equal previous test results with no pull to either side, practically no smell of hot brakes, and only a slight loss of pedal. At double the number of stops (18), which were at an average of approximately one every 30 seconds, we still had adequate brakes. All wheels could be locked if desired; there was no pull to either side. Stops could be made "hands off" except for irregularities in road surface. There was less pedal loss, after Cop-Sil-Loy treatment, in 18 stops than there had been in nine without it. At this time the brakes were exceedingly hot, a generous amount of smoke emitting from each drum, but fade did not result. We had doubled the original test and still had adequate brakes. Cop-Sil-Loy had proved its claim in eliminating fade.

Extensive tests by many large fleet operators over the last year show satisfactory results with letters of acceptance by taxi, creamery, and trucking companies. A large city transit line, after exhaustive six-month tests for service life, is starting to equip its fleet of busses with it. Two local brake shops, Community Brake of West Los Angeles, and Thompson Auto Service of Inglewood are offering a 40,000-mile guarantee on a brake reline when treated with Cop-Sil-Loy.

In addition to the foregoing advantages, there are other benefits. It is claimed that it will waterproof your brakes—no prolonged drying-out period after wetting is required—the first couple of brake applications will squeeze out the water, the next will stop you. The cost per mile for brake maintenance, due to extended life of lining and reduced amount of brake adjustments, including cost of treatment, becomes extremely low.

Brake lining life expectancy tests are now being conducted on a good cross section of cars. At this time, it appears that the claim of twice the life of your present lining is not out of line. Checked after 3700 miles of driving, our Plymouth station wagon shows lining wear of .0045 of an inch, indicating an expectancy in this case of 822 miles per $\frac{1}{4000}$ inch of wear. This remarkably small indicated rate of wear is due in part to the fact that this car had made a trip to Bonneville, a distance of 750 miles, during which brakes were used little compared to normal city driving. Further life checks will be reported in a later issue. At this time several tests are indicating increases of over 200 per cent. One large truck company has experienced an increase of 260 per cent with a single Cop-Sil-Loy application and the brakes are still going with over 80,000 miles on them now.

As a result of the tests performed by the MT Research staff, we feel that the claims made for Cop-Sil-Loy are not extravagant. It will perform as advertised, and is the answer to improved brake performance.



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Auto Theft Is Big Business

(Continued from page eighteen)

joined with the Royal Canadian Mounted Police in rounding up a ring which specialized in stealing automobiles in the U.S. and transporting them to Canada. Here again was a ring which amassed huge profits despite expenses.

At the professional level, automobile theft is highly organized, encompassing the nation and extending even beyond national boundaries. On the amateur level it presents a critical problem to the citizen and to the law enforcement officer, all too often serving as a springboard from which the criminal neophyte is launched into a life of underworld activity.

In addition to adhering to the practice of securely locking any automobile which he leaves unoccupied, the average citizen can greatly assist in coping with the car theft problem by reporting any persons whom he sees tampering with automobiles or prowling in parking areas. An alert, observant public is a necessary element for the most effective law enforcement.

A woman in the West wrote to the FBI revealing that her neighbors had aroused her suspicions by parking automobiles in the surrounding woods in such a manner that she felt they might be attempting to hide them. Based on this information, the FBI launched an investigation which identified this woman's neighbors as a gang which had stolen 58 automobiles!

Each year thousands of stolen automobiles are bought and sold by innocent citizens throughout the United States. Before buying a used car, it is the prospective owner's responsibility to carefully inspect the title and the motor and serial numbers. If it appears that efforts have been made to alter these numbers, or if doubt arises concerning the authenticity of the title, the police should be notified immediately.

The auto theft problem can be met adequately only through the full cooperation of all law-abiding citizens. The rules are simple and sensible to follow: Protect your own car; report suspicious activities; and be certain that you aren't duped into buying a stolen car.

—J. Edgar Hoover

The Red Hot Steamers

(Continued from page thirty-nine)

The true steam enthusiast is anxious to suffer through the ordeal as follows: The boiler is checked for sufficient water and the fuel pressure is checked. Fuel pressure should be above 100 pounds on main fuel and 30 pounds on pilot fuel. The water level of the storage tank is checked (25 gallons) and the car is ready to start. A Presto-lite torch is used to heat the external part of the vaporizing tube of the pilot burner. When hot the peep hole is opened and the pilot burner lighted while opening the pilot fuel valve. With the pilot lit, the external parts of the main fuel vaporizer tubes and nozzles are heated to a very high temperature. At this point, the firing-up valve is turned on to let gasoline into the main burner, which should then burn for about five minutes before kerosene is turned on with the manual main fuel valve. When the fire is going well on kerosene, it is necessary to keep the main fuel pressure up by using the hand pump located in the center of the floor of the front seat. In about five minutes, pressure amounts to 500 pounds. During this process the hand throttle is opened, allowing steam to escape through the engine and through the bleeder valve on the steam shaft. This helps to warm the engine.

The car is now ready to run but only for a few feet. It should be driven slowly back and forth to work the water out of the cylinders and warm the engine still more. After this the car may be driven slowly, providing a constant watch is kept on the oil gauge to make sure that the engine receives oil. The oil is pumped into the steam line, is vaporized by the heat and thus carried to the cylinders. It takes

five miles or more to get the engine working at good efficiency or to get "hotted up" as enthusiasts say. You can see that the firing process is as simple as installing a Marmon 16-cylinder engine in an Austin chassis (without extending the hood).

In general, the steam car is simple to manufacture and drive. The driver has only to steer and move a throttle which feeds the engine more or less steam. There is no doubt but that increased knowledge of machinery and metal will permit the construction of a satisfactory, modern steam car. But before the steamer can threaten Detroit with bankruptcy, the maintenance, firing-up, and blowing-down operations must be greatly simplified. Anyone who has driven a steam car will realize that there are too many parts requiring too much attention for the average driver. If you don't agree, try explaining the firing process to the little woman; or better yet, try firing a steamer dressed in a good suit.

Many attempts have been made in the past to eliminate the attention that a steamer normally requires. As an example, the feature car was equipped at the factory with an electric pilot heater which was to replace the Presto-lite torch in starting. It has never worked satisfactorily. A few progressive companies, such as Doble, installed various improvements, but in doing so raised the selling price of the cars to a point where purchasers lost interest. It is certainly possible and even probable that steam engineers will solve the mechanical and economic problems confronting them. Until they do so, the steamer will rest quietly in its grave, stirring only when an enthusiast, blow torch in hand, gets out and gets under.

—Robert J. Gottlieb

Motor Trend

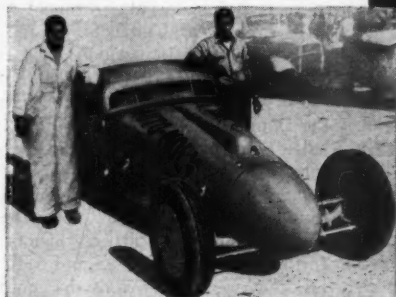
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The Incomparable Mercedes

(Continued from page twenty-one)



The circled star insigne of Mercedes has achieved world-famous prominence in past

The factory was rebuilt at Unterturkheim near Stuttgart. Production was centered on 90-hp cars and one special racer designed for the ultimate in top speed. This machine was driven by W. K. Vanderbilt at Daytona in 1904, setting a world record of 92.3 mph. In Europe, the Merces were placing first, second, and third with regularity. Competitors copied the Mercedes engine as well as the body design. Demand for the automobiles, notwithstanding their extremely high price, far exceeded production. As a result, a contract was negotiated with William Steinway, famous piano manufacturer in America, to manufacture the American Mercedes under Daimler license. Most of the parts were imported but the cars were assembled in the United States. By 1905, the German factory was experimenting with ball bearing camshafts, connecting rods, oil pressure systems, advanced ignition systems, and other innovations.

Two years later, in 1907, horsepower had increased to 120 and in 1908 Christian Lautenschlager heaped additional laurels upon himself and the factory by winning the Grand Prix in Normandy. Lautenschlager's chain-driven monster became the basis for production models. The chassis and engine were offered to the public with either touring or sports bodies. A full high-tension ignition system was used and the cars utilized an almost 1 to 1 gear ratio. For competitive reasons, the factory also offered other models with as little as 40 horsepower.

From the start, the factory recognized the advantages in free-breathing engines and therefore used extremely large valves and finally multi-valve arrangements. But with typical Teutonic stubbornness, they refused to follow the trend toward shaft-drive cars. When shaft drive became popular, Mercedes enclosed the chains. Still, the cars sold rapidly, bringing 7500 non-inflated dollars in New York.

No history of Daimler Motoren Gesellschaft would be complete without mentioning that Daimler engines were used in the first balloons, dirigibles, and planes.

The year 1912 saw Ralph de Palma setting records and winning races whenever

he competed with his Mercedes. In that year, de Palma had a 10-mile lead over his nearest competitor at Indianapolis with but two laps to go. Misfortune in the form of engine trouble befell him and sure victory was snatched from his grasp. His luck changed, however, for he drove the same car to victory later in the same year in the Elgin National Road Race.

In 1914, Mercedes entered a team of cars in the Grand Prix in France. As a result of hostilities, the entries were seized by the French and, by a strange coincidence, the famous Liberty engines thereafter employed the Daimler method of welding the valve seats, cylinder heads, and water jackets. However, the designers of the Liberty engine used single instead of dual intake and exhaust valves and weakened the heads to such an extent that an unbelievable amount of trouble was caused. These errors were finally rectified in 1916. Ralph de Palma brought one of these cars to the United States and with it won the 1915 Indianapolis race.

The first World War halted all racing except in the United States. In Germany, the Daimler Company was manufacturing battle equipment. After the war, Mercedes cars were unpopular mainly because of a cumbersome and unusual body design. The cars remained unpopular until the late Twenties and early Thirties, which brought forth the supercharged SS and SSK models. These were followed by the unbeatable Merces in the era from 1930 to 1938. Mercedes was consistently victorious in the racing field during this era and success was universally thought to be due to financing by the Nazi regime. While there was some subsidization, it was not nearly as much as is generally believed.

In 1938, three 12-cylinder Merces placed first, second, and third at Tripoli. The Italians had developed a 1.5-liter (91.53 cubic inches) engine and therefore changed the race rules so that competing cars could have a maximum of 1.5 liters in the 1939 race. In a period of eight months, Mercedes 1.5-liter cars were designed, built and entered in the race. They came in first and second.

Between 1937 and 1938, approximately 300 540K series cars were built. These eight-cylinder beauties developed 180 bhp and were good for 120 mph. In 1940, a 2000-hp, twin-engine racer with an estimated top speed of 450 mph was bound for Salt Lake City for an effort to break the existing 400 mph record. The war halted its progress; the car has never run a race and is presently reposing in a museum in Germany. An unconfirmed rumor indicates a speed record attempt will be made with the car in the U.S. in 1953.

During World War II, bombing raids at Stuttgart, Unterturkheim, and Sindel-

finger destroyed nearly 85 per cent of the factory. What remained was removed by the Russians upon their departure. Rehabilitation commenced immediately at the expiration of the war though it was not until May 1949 that post-war Mercs commenced to roll from the assembly lines.

A number of post-war cars is offered. The smallest chassis, designated the 170D, is fitted with a small, high-speed, four-cylinder diesel engine. For this reason, it is the most interesting. It develops 40 bhp at 3200 rpm. Its wheel base is 112 inches; compression ratio is 19 to 1 and it weighs 1830 pounds. All four wheels are independently suspended and the car is fitted with a four-speed transmission. The maximum speed and cruising speed reflect an interesting figure: 62 mph for each. This economical car delivers 40 to 45 miles per gallon of fuel oil.

The 170S is similar to the 170D except that it is powered with a four-cylinder gasoline engine, developing 52 bhp at 4000 rpm. Its compression ratio is 6.5 to 1 and it will do an honest 75 mph. In major respects the chassis is similar to the 170D although coil springs and wishbones are used in place of the transverse leaf springs on the front.

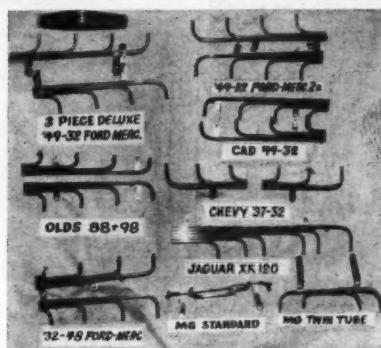
The most elegant of the post-war Mercedes and a car reminiscent of earlier day success is the 300S and its counterpart, the 300SL. The 300S has an overhead six-cylinder engine developing 150 bhp. It also has four forward speeds, and independent suspension is used with coil springs, front and rear. The car is designed for a maximum of 70 mph in third gear and an honest 108 mph in fourth gear.

The 300SL is an improved version of the 300S and is designed for sports- and competition-minded drivers. The top of the car is less than 50 inches from the ground and the doors present a unique feature in that they open upward. The engine develops 173 hp and the weight of the machine is approximately 1900 pounds. Reliable information on the true top speed of the car is as yet unobtainable, but it certainly will not be less than 150, nor more than 175 miles per hour. These post-war products are destined to continue the successful career carved by Mercedes.

Throughout this treatise on the development and history of the Mercedes, all reference to Dr. Carl Benz has been carefully omitted. Benz joined Daimler in 1883. His contributions to the automotive industry and the products that bear his name are of such magnitude and interest that they should not be interwoven and confused with the accomplishments of Daimler and Daimler Motoren Gesellschaft.

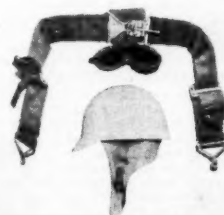
The circled star insignia of Mercedes has achieved world-famous prominence in the past as a result of progressive engineering. If the post-war cars are an indication of future success, Mercedes' progress and development will continue in the same pattern as in the past.—Robert J. Gottlieb

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What Is the Cost of Customizing?

(Continued from page thirty-five)



Barris tests lacquer on model before applying the usual 28 coats to full-sized car

ering the rear of the car with leaf springs, from 1½ to four inches, runs \$5 for the material and \$10 for labor. Reversing the spring eyes, where you have to remove the spring from the car, runs \$15. If you remove the springs and spring leaves, stretch each leaf, that is, flatten it out to get three to six inches lower, it'll cost \$25 for a pair, or \$15 for one on the earlier models. Generally, the labor involved in removing and replacing these springs runs \$10 for early Fords, with a complete stretching job, \$25. Long shackles, used with some early type Fords, which can give you two to six inches drop, run \$15. None of these prices include any work such as undercarriage channeling.

NICK: What's that?

GEORGE: Complete undercarriage channeling includes cutting out the flooring, C-ing the frame (cutting an arc to clear the axle), stretching the spring, installing block spacers and complete lowering of the back assembly. On late model Chevys, Fords, Olds, Cads, this runs \$145. Channeling the front end only, which consists of sectioning the "A" frame to slip into the complete unit, runs \$20 for the first part, \$25 for the second. If you have a solid front axle you can replace it with a dropped axle for \$20, plus \$15 for installation.

NICK: Getting back to body work, what do continental-type tires run? I've seen prices ranging from \$49.50 to \$130.

GEORGE: Those prices cover material only. Labor for installing these runs from \$50 to \$75. If you were to take a production model, mold a continental tire in one piece into the deck, it would cost as much as \$300. But, it's a lot of work. You have to recess the tire into the pan, mold the pan, the rear fenders and assembly into one piece and extend the rear bumper brackets. Another method is to extend the rear fenders the additional length of the spare tire. This runs \$100 a side, with a maximum of around \$125. A continental tire that's recessed into the deck lid, which means you don't have to lengthen the bumper or pan assembly, runs \$350. It

costs more because the tire has to be built into the deck, countersunk into the flooring. This involves either sealing the deck into one piece and making a special bracket assembly, or sealing the bottom part of the deck and making an upper deck one-third the original size.

NICK: What other things can be done to the body?

GEORGE: Fadeaways can be used. For earlier models up to '48 on either GM or Ford products, it runs \$200 a side. This consists of capping a fadeaway on the front fender, on the doors and quarter panel, running them into the door, the quarter panel and the fender. It also involves slicing a corner out of the hood and fitting it into the fenders. You can go radical with early cars by changing the front fenders to Olds or Cadillac, building the fadeaways high into the fenders. This ranges up to as high as \$500.

NICK: I think I'll stick to something cheaper. What else is there that can be done?

GEORGE: Other things that are quite popular now are the building of fake air scoops and adding different types of chrome strips. The price of an air scoop ranges from \$50 to \$200, although for \$200 it wouldn't be fake. You can have a scoop with a tunnel to cool the brakes, the inside of the car, or into the rear deck to make a refrigeration system for your car.

NICK: What about the chrome strips?

GEORGE: After you completely de-chrome a car, you can add a chrome strip to give a unique design line. For example, a '52 Buick spear with the curve going down into the quarter panel, or a Packard 300 with a spear-headed front with the sharp "V" extending into the door panel, or the Pontiac spear. There are all kinds. You can also make up chrome strips from ½-inch round stock or ¼ by one-inch flat stock, shaped to suit your car.

NICK: What does it cost to chop a top?

GEORGE: You're getting into the harder, and naturally more expensive, work now. Chopping a steel top on either early Ford or GM products ranges from \$350 to \$450. This includes the glass, weather stripping, garnish molds, rolling the doors into one piece, a stretched back, slanted windshield, and complete fitting of doors. Fords from '32 to '34 cost \$150-\$175. Putting a turret top on these cars costs \$65. For a '36, it runs \$200. Late model top chops run \$500 to \$600. On those where the drain molds are removed and the door posts are slanted, it runs \$500-\$550. Another type has the door posts and side windows completely removed and the tops of the doors and tops of the quarter panels welded into one piece to give it a hardtop convertible look. This runs \$550-\$600.

(Continued on page forty-eight)

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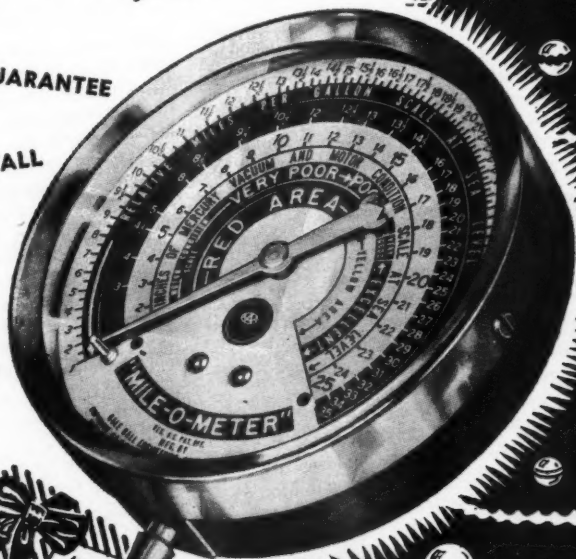
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Forty-eight

What Is Cost of Customizing?

(Continued from page forty-six)

NICK: What about a removable steel top?

GEORGE: For a convertible or Bel-Air it would run \$500, or \$575 for a larger car, like a Cad DeVille. This top would have to be power-hammered from sheet stock, and could have a wide rear window, circular window or one-piece Plexiglas.

NICK: Are there other things you can do to a top without getting into a complete top chop?

GEORGE: Several. You can blank in two quarter windows of a five-window coupe and remove the drain mold for around \$150. Another change is to remove the drain mold, shift the doors up to fit the top, and round off the door corners. This runs \$200. Then you can take out the door posts and window section of the quarter panel, to give it the hardtop convertible look, for \$350. Wrap-around or larger circular windows made of Plexiglas range from \$200 to \$300.

NICK: What does a channel job cost?

GEORGE: We've covered the most popular type of channeling, undercarriage or frame channeling, but you probably mean body channeling. This is different because you cut the body loose from the frame, cut the floor out and drop the body below the frame without changing any of the undercarriage. Prices on this start at \$600 and can go up to \$1500 by the time you shift the fenders higher into the body, shift the door panels, section the hood, or mold in the front shell assembly.

NICK: I like these section jobs, even though I don't know what it means.

GEORGE: When you section a car, you remove a piece out of the fenders, doors and quarter panels, all the way around. This doesn't affect the chassis, nor do you have to shift the fenders, build up or section the hood. This runs around \$700. A more expensive version is to take a three to four-inch section from the top of the body, roll the doors and quarter panels into the body, build a new deck, rear section and hood. This'll cost \$600 to \$1500.

NICK: What about padded tops and interiors?

GEORGE: That's a subject by itself. Suppose we save that for another time?

NICK: Well, it is getting kind of late. Before I go, though, how about giving me the prices on paint?

GEORGE: There are two different types, enamel and lacquer. Enamel isn't as much trouble to apply and it isn't so expensive. For a one-tone enamel job, you'll pay \$85; for a two-tone, \$110.

NICK: That's a lot more than the \$29.95 job I've got on my car.

GEORGE: Lots more care goes into a custom paint job. You wouldn't have a beautifully built house covered with sloppy paint, would you? It's the same with custom cars.

NICK: Do prices vary according to type or model of car?

GEORGE: Prices are about the same, whether it's a convert, sedan, coupe, Chevy, Olds or Cad.

NICK: You said lacquers cost more. How much more?

GEORGE: Special type lacquer starts at \$150 and goes up to \$225. The reason for this is that there is much more work with lacquer. It takes a complete conditioning of the metal and the paint, complete priming and surfacing, block sanding, and the addition of special sealers before the main color coats. Twelve color coats are usually added, then you color sand, add another 10 coats, color sand again, then put on the last main flow coats of paint thinner. In a lacquer job, you use up to nine gallons of paint, or an equivalent of 28 coats of lacquer. The color sanding, of course, thins this down somewhat.

NICK: I suppose there is a difference in the one or two-tone jobs, the same as enamel?

GEORGE: The one-tone paint job in lacquer runs \$150 to \$185. The two-tone starts at \$200 and goes to \$225. Any of these include the metallic type of phosphorous or luminous paints which glow at night, and the flat type. Metallic paints are transparent, and are toned by the underbase. Depending on the color base, the deepness or the lightness will determine the amount of glow the car has.

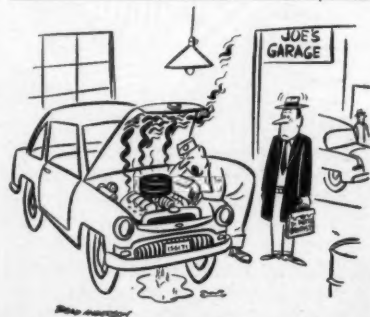
NICK: Well, I'd better be getting back before my editor starts calling. I wasn't going to be gone this long. I know one thing, though. I'm bringing my car back so I can have it dechromed, filled, chopped, dropped, channeled—

GEORGE: Wait a minute! What do you want? A conservative, a radical or a complete custom?

NICK: Give me the full treatment!

GEORGE: You'd better start easy. You thought these prices were high at first. It's like I told you before, a conservative costs \$300 to \$1500, a radical will run around \$2500, whereas a complete custom can run from \$5000 to \$10,000.

NICK: Oh! Well... let's just start with a dechrome job. I'll get around to the rest of it gradually.

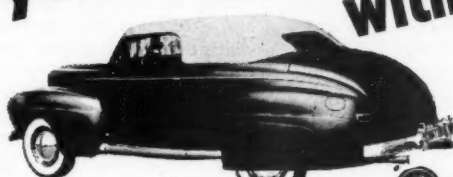


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ACCESSORY TRIAL

Crankcase Additives Containing Molybdenum Disulphide

NOTE: After considerable investigation, some testing, the reading of a great number of testimonials, and the accumulation of a wealth of technical opinions, MOTOR TREND is unhappy to report it has not found what it considers to be a satisfactory set of conclusions in regard to crankcase additives containing molybdenum disulphide. Numerous testimonials laud such products. Technical opinion varies between cautious and downright discouraging. We have discovered, however, the evaluation of such products, in light of the tremendous number of variables that go with engine and automotive performance, is a job far beyond the financial or technical capacity of this publication.

Because we have promised our readers that we would publish our findings on crankcase additives, we are presenting this digest. On the other hand, any criticisms are not necessarily a condemnation of molybdenum disulphide, which, in itself, is a good lubricating agent.—Editor

THE ENTIRE SUBJECT of oil additives is a highly controversial one, mainly because of the fact that by most known testing methods it is difficult, if not impossible, to prove or disprove conclusively any claims made for the products. Take the case of our test product, on the surface just another additive. Great things are claimed for it.

The claims made for the product are that it "makes your oil 300 per cent more efficient, that it reduces friction, gives higher speeds, faster starts, less gas consumption, less heat and reduces carbon." These claims are evidently based on tests conducted by the manufacturer that showed, under the conditions used, that it had the ability to perform these functions. Briefly, these tests consist of two discs immersed in solution, with one stationary and the other rotating against it at 1700 rpm under 75 pounds pressure. Temperature readings, time to reach peak temperatures, time before failure, etc. were taken using the additive alone, with oil, and oil alone. According to these particular tests, the additive and the additive and oil did not reach as high temperatures, required more time to reach peak temperatures, and did not fail for the duration of the test as did discs in oil alone. Temperatures and times were therefore used as the basis for computation that the additive was from 176 per cent to 383 per cent more efficient than oil alone.

It should be pointed out that laboratory tests are useful and valid insofar as they reflect what happens in actual service. Ex-

treme pressure friction tests may impose conditions never encountered in normal service; therefore, it is difficult to see the validity of the use of this test for claims put forth. It is true, however, that if it reduces friction, the other things will follow, except for the reduction in carbon, which could in no way be predicted by the friction-disc test.

The claim for reduced carbon deposits may be a valid one, but adding a solid material (molybdenum disulphide) to an engine lubricating oil, on the face of it, is unsatisfactory. Although molybdenum disulphide is one of the "greasiest of metals," thereby strengthening the possibility that if it deposits in the right places its effectiveness as a lubricity agent is increased, the very fact that it does deposit out may be its one basic disadvantage. The fact that it is insoluble in oil, and that the highly finished rubbing parts of most engines are not capable of suspending or entrapping insoluble additives, tends to throw doubt on the ability of the product to remain on the surface. It therefore may well be that as it deposits out, it will do so on plugs, valves, and combustion chambers, where it may have harmful effects.

If molybdenum disulphide gets into the right places it can be extremely effective as a lubricity agent. But getting it to adhere to these right places (such as bearing surfaces, cylinder walls, pistons, etc.), is something else. It is claimed for the additive that "the molecular structure is such that each molecule orients itself so that it is firmly attached by molecular attraction to one face of mating bearings against each other—the process by which the molybdenum attaches itself to the friction surface is described by the manufacturer as 'plating out.'"

This "plating out" process, to be effective, would occur because of the naturally strong sulphur-to-metal bond. This would normally occur, however, only where a metal surface is chemically clean, and the ferrous surfaces of an engine are definitely not chemically clean.

In an attempt to prove the lubricating quality statements about the additive, MOTOR TREND Research had lubricity tests conducted with the use of a Shell Four-Ball Wear machine. These tests consist basically of rubbing steel on steel and steel on bronze, with the metals immersed in solutions of the recommended amount of the additive with a high detergent oil, and the oil by itself. The tests were somewhat inconclusive since under one condition the oil by itself indicated less wear

than the oil-additive combination, while under the other condition, the difference in wear between the various solutions was practically immeasurable.

To substantiate the claim that the additive "does not appear to have a corrosive effect on any type of bearing material," MT Research had an independent laboratory conduct a standard copper corrosion test. This consists of placing a copper strip in the additive at a temperature of 210° F, leaving it there for 96 hours, then checking for corrosion. The results were negative, proving that the additive is not corrosive to copper, a metal that is more reactive than any common bearing metal. The inference that can be drawn from this is that if a material does not corrode copper, it will not corrode the many other metals and alloys commonly used in bearings.

And what do the automotive and petroleum industries think about additives? One automotive manufacturer states, "Servicemen are urged to avoid any method to improve lubricants by adding so-called dopes, solvents, friction reducing compounds, and other trick materials to the product supplied by reputable petroleum marketers. The use of these materials in engine oils . . . is entirely unnecessary to the proper operation. . . ." Another manufacturer states, "The use of break-in oils or compounds which are sold separately for the owners or station attendants is not recommended. Some of these oils may contain certain materials which may be actually harmful or may not be compatible to the compounds added to the oil by the manufacturer."

One petroleum manufacturer has the following to say, as quoted from a bulletin on tune-up oils, break-in oils, and crankcase additives: ". . . it is our opinion that few, if any, of the so-called tune-up oils are of any value in improving the engine's performance. In the case of heavy-duty crankcase oils, these tune-up oils might do considerable harm, since no one can tell, without extensive laboratory and engine tests, whether or not the additives and dopes would be compatible with the detergents and corrosion inhibitors in the heavy duty oils. Such compatibility tests are very expensive and have prolonged durations."

On the other hand, a cross-section of the testimonials of users of additives containing molybdenum disulphide would seem to indicate they are quite satisfied with the product. A sampling of these: "I am very happy to advise that our experience in using the additive with standard lubricants has shown amazing results . . . to date we have yet to find as peppy a car or one as quiet as the demonstrator." "My '25 Evinrude is subjected to the hardest possible use—long runs at top speeds—and with the addition of a spoonful of the additive to the one-half pint of oil per gallon of gas I get higher rpm

(Continued on next page)

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Fifty-two

Crankcase Additives

(Continued from preceding page)

and smoother operation." "I am convinced that the exceptionally cool running, effortless and economical operation of this model (250 cc Puch single-cylinder motorcycle) during the break-in period is due to the use of (the crankcase additive)."

By now, the reader probably wonders, "Yes, but are additives using molybdenum disulphide good or bad for my engine?"

Unfortunately, it is impossible for MT Research to unequivocally endorse or condemn such products. It will have to be left up to the individual to decide, much as a woman has to decide in her own mind whether or not one soap will leave her dishes more "sparkling than diamonds" or a man has to decide whether one shaving soap gives him a "smoother shave."

—Walt Woron

Fiberglas

(Continued from page twenty-nine)

ick Motors of Mountain View, Calif. Here the largest Fiberglas sports car body ever constructed was recently completed. The one-piece body was designed to fit 123- to 125-inch wheelbase cars, yet still weighs only 220 pounds. It is reported that the Maverick company specializes in the assembly of sports cars.

Another reported builder is Muntz Motors of Chicago. Latest information is that Muntz expects to build a sports car using Fiberglas; it will be on the market after the first of the year. Muntz will be the first to go into matched metal die production on this car.

Across the Atlantic, another sports car builder, the Allard Motor Company of London, England, is seriously considering production of a Fiberglas car using their Palm Beach model body style. Production schedules are not immediately available, but with the Allard reputation of top quality workmanship, the car should find favor on this side of the Atlantic.

The "Yankee Clipper" is another Glasspar-bodied sports car in production by Strassberger Motors, Inc. of Menlo Park, Calif. This company is installing Ford Six, V-8, and Mercury engines and assemblies which are guaranteed by the Ford Motor Company.

Why Fiberglas?

In the preceding paragraphs we have reported on the progress of the use of Fiberglas as it pertains to automobile body construction; we have also given some of the problems and disadvantages of this new wonder material as found by those who have been working with it over a period of time; what, then, are the reasons for this sudden turn of the sports car body builders to Fiberglas?

Though the Ford Motor Company pioneered the first all-plastics car, they dropped their announced production project after considerable money was spent on experimentation. It has been only within the past three to four years that the plastics industry has begun to come into its own because of the discovery of new polyester resins. These resins cure without the aid of pressure and with only natural heat

of the atmosphere. The glass fibers and mat strengthen the plastics much as steel rods strengthen concrete. The result: a material which, weight for weight, is much stronger than steel, does not need heavy or complicated stiffeners or sub-frames, and has great resiliency. Though hitting it with a two-by-four will not damage it, should a break result in the material due to a major impact, it can be easily and cheaply repaired. And one of its great advantages over metal is that it will neither rust nor oxidize.

Even though the present price of the material is approximately 75 cents per pound against 18 cents per pound for metal, the savings in high-cost labor more than offsets this disadvantage. Of course, the material high cost will restrict use of Fiberglas in large-scale production projects, but this can be construed as an advantage to the sports car builder who does not want his design to become a glut on the market.

For these reasons, we feel the potential of Fiberglas is terrific, especially when the know-how in the use of the material is in the hands of individuals who are willing to share their experiences with others who want to help satisfy the growing demand for American-built sports cars.

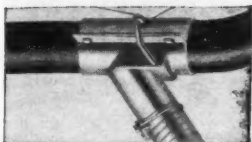
Watch 1953. Plastic bodies are not only the coming thing—they have come, and they are too good not to stay.

—Jim Potter



"I imagine I'll get home for dinner around 7:00 or possibly 8:00. Of course, that's just a rough estimate!"

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Spotlight on Detroit

(Continued from page ten)

The power steering unit, developed by Packard engineers, takes about 80 per cent of the effort out of driving but allows the driver to retain the "feel" of the car.

Several other advantages are claimed for Packard power steering: The car's stability is improved, road shock is counteracted at the wheels and the jarring bumps of rough road driving are prevented from reaching the steering gear; it has a steady factor which reduces danger from blow-outs; there are fewer turns of the steering wheel for easier parking; and the unit is of simplified design for easier servicing.

The 327 cu. in. Packard Series engine has been increased from 155 bhp to 180 bhp @ 4000 rpm; from 135 bhp to 160 bhp @ 3600 rpm on the Clipper Deluxe Series; and the 288 cu. in. engine on the Clipper Standard from 135 bhp to 150 bhp @ 4000 rpm. Greater horsepower and increased smoothness have been accomplished with a redesigned combustion chamber in the cylinder head. Compression ratio is 8 to 1 on the 160 and the 180 horsepower engine; 7.7 to 1 on the 150 horsepower engine. Bore and stroke is 3 1/2 in. x 4 1/4 in. on the larger engines, and 3 1/2 in. and 3 1/4 in. on the smaller one.

A newly developed device on the exhaust manifold for each line of cars provides increased heat for the choke control and results in quicker warm-up and improves the engine's efficiency. For the 180 horsepower engine, a new four-barrel carburetor is installed which allows a more efficient mixture of air and fuel to reach the cylinders. In addition, new chrome-plated, longer-wearing piston rings are used.

SPORTS CAR ANNOUNCED

The swing toward Detroit-built sports cars continues to gain momentum. Kaiser-Frazer has announced plans to build more than 1000 Fiberglass-bodied cars in 1953. Styled by Howard Darrin in Los Angeles, the new model will weigh in the neighborhood of 2000 pounds. They will be powered by a Henry J six-cylinder engine. Cost is expected to be in the \$2800 bracket. It will be presented to the public in about nine months.

For a little under \$6000 you will be able to buy a Buick "Skylark" in 1953. This is the sports convertible introduced last fall. Built on a Roadmaster chassis it will be powered by Buick's new V-8 and have power steering as well as all other Buick luxury features.

Nash has announced that the long-awaited NXI small car will be on the market the latter part of 1953. As predicted earlier in MOTOR TREND, Austin Motor Company and Fisher & Ludlow, Ltd. of England will collaborate on body and chassis. Among scanty specifications available, the car is reported to have an 85-inch wheelbase and a 42-bhp engine. It is said to give up to 40 miles per gallon at normal speeds.

For news on Chrysler Corporation's latest sports experiment see page 22, this issue.

—Harry Cushing

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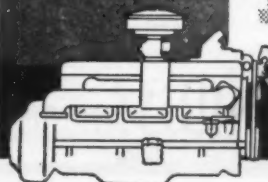
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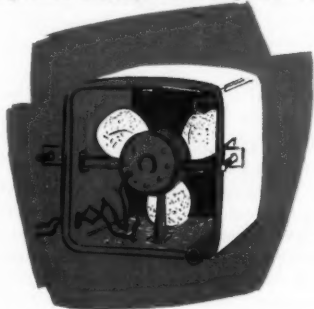
TREATS THE ENGINE—NOT THE OIL

Preparing Your Car for Winter

(Continued from page thirty-seven)

HEATER AND DEFROSTER

Heater hose, due to its small diameter, is seriously affected by swelling, causing a restriction, or by drying out, and chipping. Hose in this condition should be replaced. At this time the heater core should be flushed of rust and dirt that will usually be deposited thereby restricting flow. Ap-



ply moderate pressure from a garden hose alternately to outlets until water is clear. Heater and defroster fan motors may lose their efficiency due to dirty commutators. Clean and replace brushes if required, and check wires for frayed insulation. For improved efficiency, core should be cleaned of accumulated dust and dirt.

BRAKES

Brakes are a primary safety item, and should be in top condition at all times of

the year. The effects of a dragging brake shoe or an out-of-round drum may not be noticed on dry roads, but will have a definite effect on ice or snow, due to lowered traction. Stopping distances will increase tremendously, and vary greatly, depending upon type of surface and temperature. Check your stopping ability frequently where traffic will permit. Do not depend too much on this, as conditions change unexpectedly. Worse conditions will prevail at around freezing; glare ice is twice as slippery then as it is at zero. Stopping from 20 mph will take approximately 250 feet with the temperature at 32° F and around 115 feet at zero.

CLUTCH

The adverse conditions encountered in winter operation requires maximum efficiency in clutch operation. Its condition is easy to check. The absence of pedal play indicates the need for adjustment to compensate for wear. This will vary, but is usually about one inch. Failure to adjust the pedal will ultimately lead to clutch slippage, resulting in excessive heat that will damage lining and eventually cause replacement. Other symptoms that should not be ignored include grab, chatter, or vibration. These indicate that the clutch may soon give trouble and corrective measures should be taken.

—Bob Hoepfner

Potent Threat for Indianapolis

(Continued from page thirty-one)

Owned by Roger Walcott, an Indianapolis businessman, the car was at the speedway to participate in some exhaustive tire tests conducted by the Firestone Tire Racing Division. Driver during this period was Joe James of Van Nuys, Calif.

The Chrysler Corporation Engineering Division did the engine modification, accepting the assignment as an extension of their tests and experiments which began with the work done by James Zeder, vice president. The potentialities of the Chrysler engine were reported by Mr. Zeder to the SAE in March. The present development is the result of Chrysler Engineering's desire to secure actual operating experience with the engine, rather than just dynamometer results.

The chassis is nearly an exact duplicate of the one used by Bill Vukovitch to burn up the track in this year's "500." One major difference is in the location of the engine, now situated on dead center.

In the reworking of the engine, a stock "FirePower" block with regular 3 $\frac{3}{8}$ -inch stroke and 3 $\frac{1}{16}$ -inch bore was used. The same changes which enabled Chrysler to develop a 353 bhp test engine last Spring were incorporated (see "Spotlight on Detroit," July MOTOR TREND), except for

changes needed to make it a racing engine such as eliminating the battery.

Transmission is a two-speed mechanical Meyer-Drake installation; rear axle ratio is 3.03 to 1; oil supply is from a dry sump, and a standard full-flow oil filter is utilized. Crankshaft, connecting rods, engine bearings, rocker arms, push rods, and gaskets are all standard Chrysler components. The engine's compression ratio has been raised considerably by doming the pistons. Certain modifications were made in the camshaft, and mechanical tappets were installed. With these changes the engine develops 442 lbs.-ft. torque, a factor which gives it exceptional acceleration, and allows it to come out of turns at very high speeds. BMEP is 202. Horsepower per cubic inch is 1.22.

Throughout the entire test period the Chrysler-powered racer has been driven 356 laps, including 40 laps to run in the new engine. All were at high speed, except during the break-in period; yet, it was not forced to change plugs, using Champion NA-19 on all speed runs.

Chrysler engineers report the engine was never touched during the tests, not even a bolt tightened, a tribute to the stamina of U.S. production engines. —Harry Cushing

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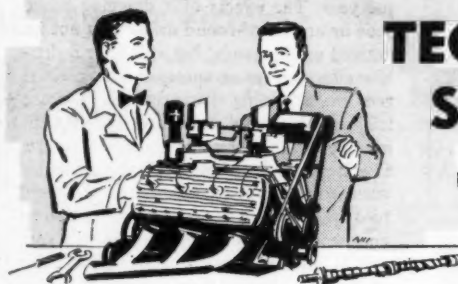
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Fifty-six



TECHNICAL SERVICE

By Bob Hoepfner

NOTE: So many questions asked by our readers are so universal in nature that this feature was created, hoping that perhaps some of the problems you might have in connection with your automobile might be answered here. Since hundreds of letters are received each month, our only request is that you keep your questions as brief as possible. Address all inquiries to the MT Research Technical Staff and, if a personal reply is desired, enclose a stamped addressed envelope. Though immediate replies are not always feasible answers will be made as rapidly as possible.—The Editors

QUESTION—I would like information concerning my '50 Pontiac—it uses too much gas. Is there any change of jets or disconnection of automatic choke that would increase gas mileage?—H. S. Bragg, Huntsville, Missouri.

ANSWER—Yes. There are smaller jets available for the Carter carburetor on your car. The automatic choke may also be set incorrectly. Would suggest you have a reliable tune-up man check over the ignition and carburetor setup.

QUESTION—I have a 1949 Ford 6 and I want to find out how to speed up my engine, I haven't seen much about the Ford 6 1949-51 and would like some information.—Lavar Rueckert, Ottumwa, Iowa.

ANSWER—Our new Trend Book 106, HOT ROD YOUR CAR, has the information you require.

QUESTION—Can Methanol or Nitro fuel be used to an advantage in a stock V-8 engine? Does this fuel carbon destroy pistons and cylinder walls quicker than gasoline? Is a special carburetor needed and a change in timing necessary?—David Moore, Inspiration, Arizona.

ANSWER—Methanol and Nitro require special carburetors. We see no advantage in using it in a stock engine because: 1. Approximately four miles to the gallon is the best you can get. 2. A good blend of the two will cost you over a dollar per gallon, which means it would cost you about 25 cents a mile.

QUESTION—In your August issue you stated that the Hudsons have high efficiency engines because they have a high horsepower per cubic inch rating. They probably do have high efficiency, but you can't prove it by the horsepower per cubic inch figures. This way you are bound to favor the higher rpm engines. For example: say we have two engines, one having a larger piston displace-

ment than the other. The smaller engine will develop as much maximum horsepower as the larger one because it peaks at 4000 rpm, while the larger one peaks at 3600. Using your method you will find the smaller engine the more efficient. I claim that a real efficiency test (amount of fuel per horsepower hour) might prove your findings wrong.—D. Brooks.

ANSWER—Horsepower per cubic inch is still the best overall indication of engine efficiency regardless of size. Compare the four '51 engines below:

C.U. IN	H.P. at RPM	per cu. in.
A 234.8	115-3400	.489
B 239.2	96-3400	.402
C 250.6	116-3600	.463
D 255.4	112-3600	.439

You will note A, comparable in size with B, develops 19 more horsepower at the same rpm. A also develops more horsepower than D, the largest, and at lower rpm. By comparison A is the most efficient design. Its smaller size, turning at less rpms, will burn less fuel, and produce more horsepower, an indication of its efficiency (the ratio of energy expended to power produced).

QUESTION—Please furnish the name and address of someone who can furnish attachments for connecting a Cadillac engine to a Lincoln Zephyr driveshaft or clutch housing.—McGill Conner, Santa Monica, Calif.

ANSWER—The McBar Machine Shop, Inc., 65 N. Miami St., Peru, Indiana, can supply adaptor housings for all the popular conversions. These adapt the engine to the Ford, Merc, or Lincoln transmission. Suggest you try a local speed shop (see ads in MOTOR TREND) as they should be able to supply this type of equipment.

QUESTION—What can your staff suggest for me to do to get the most out of my '52 Olds Super 88? I have installed headers with stock mufflers. What can I do to relieve valve float at high speed? The car is slow at high speed. I wish to keep the car as near stock as possible.—Allen McMillan, Oakland, Calif.

ANSWER—Valve operation in cars equipped with hydraulic lifts is a problem at high speed. Adjustable pushrods which can be used with your stock tappets, by eliminating the hydraulic action, is the only way to be positive in correcting this condition. Some help may be had by hand picking a set of valve springs, obtaining as close as practicable a matched set. Length should be identical with as high a seating pressure as possible and with a maximum variation of not over six pounds.

Motor Trend

QUESTION—I would appreciate information as to where I can buy a copy of a shop manual (or equivalent publication) for a '51 Olds Super 88. J. H. Stewart, Greenwich, R.I.

ANSWER—Oldsmobile Division of General Motors publishes a complete and well-illustrated shop manual on the 88 and 98 each year. The zone office in your area should be able to tell you where they may be purchased.

QUESTION—Was wondering if you could give me the name and address of anyone who has restyled and also hopped up a '51 Chevrolet Bel Air?—Edward E. Aker, Spokane, Wash.

ANSWER—The cover car in the May '52 issue of MOTOR TREND is a good example of a custom Bel Air. Work on this car was done by George Barris, 11054 Atlantic Ave., Lynwood, California. At the time of customizing, the engine was stock.

QUESTION—I would like to know where I could get a set of wire wheels like the ones shown on the car on page 50 of your new book, *Restyle Your Car?*—W. P. Kellam, U.S.N.

ANSWER—The wheels shown are the knock-off, Rudge-Whitworth type and are somewhat expensive, as they require adaptors to fit your Ford. A. E. Ulmann, 342 Madison Ave., New York, N.Y., are the sales agents for the U.S. The Kelsey-Hayes Co., Detroit, Mich., will have a bolt-on type wire wheel available early in '53 that will be interchangeable with your present wheels.
—Bob Hoeppner

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF MOTOR TREND, published monthly at Los Angeles, California, for October 1, 1952.

1. The names and addresses of the publisher, editor, managing editor, and business manager are:
Publisher: Robert E. Petersen, 1870 Sunset Plaza Dr., Los Angeles, Calif.
Editor: Walter A. Woron, 15225 Cerise Ave., Gardena, Calif.

Managing Editor: James E. Potter, 12201 Malone, Los Angeles, Calif.
Business Manager: Theodore A. Johnson, 11973 Montana Ave., Los Angeles, Calif.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

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3. The known bondholders, mortgagees, and other security holders owning or holding one per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, or triweekly newspapers only.)

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Business Manager

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(SEAL) PHYLLIS M. AVEDON

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December 1952

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The epoch-making, 6000-mile journey consumed only one week to the minute. Beginning in National City, California on Saturday, Sept. 20, after travelling to New York and back, Mattar ended his non-stop trip in Los Angeles on Sept. 27. With Mattar on the endurance run were Joe Mitchell of San Diego and Ernie Bashara, Anaheim, Calif. The three men took regular shifts at the wheel and slept, ate, and bathed in the car.

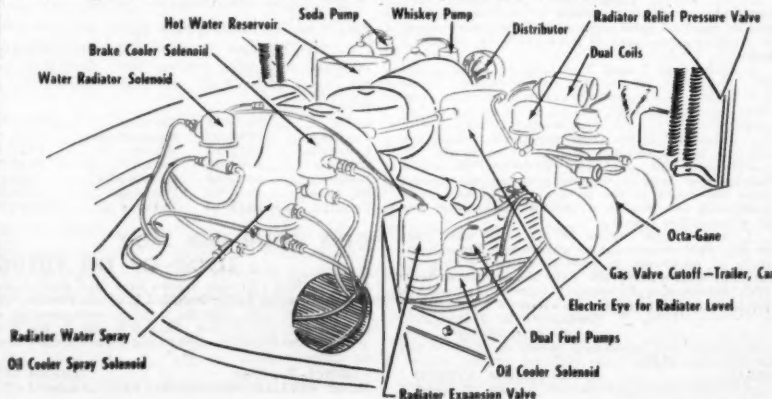
The car itself could easily be the subject of a long article (covered in some detail in Sept. MOTOR TREND) because of the fabulous gadgetry installed in it by the mechanical wizard, Mattar. Key to the non-stop feature of the trip is the automatic fuel supply made possible by the trim trailer shown in the top picture. This trailer holds a 230-gallon tank for gasoline, a 15-gallon tank for oil, and a 30-

gallon water tank. Each of these tanks is connected by hose and pipe lines to the engine. Solenoid-operated valves controlled from the Cadillac's "cockpit" supply the desired liquid directly to the engine. Thus only two mobile refueling runs were required on the cross-country trip.

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Quite an automobile!



Motor Trend

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IMPORTANT NOTICE! Only one CAR may be listed in any single Sell 'N' Swap insertion. This limitation will not apply to parts, catalogs, etc.

SALE-Parts from old cars such as: Cords, Auburns, Cadillac, LaSalle, Buicks, Grahams, Hupmobiles, Chevrolets, etc. W. Gregory, Box 155, South Attleboro, Mass.

SELL-'33 V-12 Packard conv. sedan, body by Dietrich; showroom condition, white sidewalls, side mounts, road lights, 64,000 miles; stored during war. \$975.00. H. L. Williams, 8021 Radford Avenue, North Hollywood, Calif.

SELL OR SWAP-'51 Hillman Minx convertible. Low mileage, purchased new in May, 1952. Will trade for MG-TC or TD. H. G. Strum, 2037-30th Street, Rock Island, Ill.

SELL-'36 Auburn 851 phaeton, good for rebuilding into classic car. In running condition. \$95.00. Maj. B. L. Disbrow, 4816 Ninth Avenue, Los Angeles, Calif. AX 7067.

SELL-Late '51 Jaguar XK-120 roadster in perfect condition. Low mileage. \$3400.00. W. L. Boyard, 4 N. Home, Park Ridge, Ill.

SELL-Jaguar Mk VII sedan, delivered October '51, right hand drive. Superb condition; gunmetal with red leather. \$3150. Consider good MG-TC in exchange. Call or write Thompson, Box 148, Poestskill, N.Y. Ashley 6-8850.

WANTED-Will pay \$50 reward for information that leads to my purchase of an exceptionally clean low mileage '39 Packard V-12 four-door, five-passenger conv., model 1708 by Dietrich. N. Shulka, 940 N. Western Ave., Chicago, Ill.

SELL OR SWAP-Four 21-in. wire wheels and three tires, 21x4.40-4.50, for dual manifold and carburetors for model "A." J. Welch, RR 1, Staffordville, Kans.

SELL-Tires: six 6.50x19 six-ply and five 6.50x18 six-ply, all with tubes. Also Graham and Model T wheel and parts. L. Sidwell, 572 10th St., S.W., Cedar Rapids, Iowa.

WANTED-Radiator cap with ornament for '31 Packard, ammeter for '31 Packard. Stock ornament is small boy sitting down leaning back. State price. W. Byington, Hill Road, Brentwood, Tenn.

SELL OR SWAP-'41 Lincoln Continental conv., body perfect, new top, upholstery and chrome, V-12 engine fair. Priced right or want late club or station wagon, pics 25c. L. Fadely, 4508 Conquista Ave., Long Beach 8, Calif.

WANTED-Cord, supercharged Auburn, Packard Darin or sports Kissel. Also Bantam conv., fairly priced according to condition. Condition first letter, North-eastern states. A. Potter, Lafayette, R.I.

WANTED-Two or four 20-in. Detroit wire wheels for circa '29-'30 Lincoln and Cadillac; want to correspond with Jones Motor Car '14-'20 owners. D. Pennington, 1346 Logan Ave., Corpus Christi, Texas.

WANTED-Packard 12, speedster or conv. victoria; must be in restorable condition. Please send information regarding condition, body make, etc., also any pictures if available. R. Bell, 3624 Raymond St., Laureldale, Pa.

WANTED-Information leading to the restoration of the framework of a conv. top on a '30 Packard touring, model 7-33. H. Van Haelewyn, 107 S. Country Rd., Bellport, L.I., N.Y.

SELL-'51 XK-120 Jaguar; has plastic custom top, 11,000 miles, radio, heater, excellent condition. J. Hurwich, 510 W. Colfax, South Bend, Ind. Phone 39426.

SELL-Top offer takes '29 Pierce-Arrow model 143 limousine; paint, engine fair, tires good, licensed, inspected and partially show conditioned. Minimum bid \$350. C. Wilkenson, 303 Randall Circle, Williamsport, Pa.

SELL-'35 Auburn supercharged speedster in showroom condition, you will look many a year to find one like it. \$2300. M. Wilkerson, 1051 Opal St., San Diego 9, Calif.

SELL-Buick dual manifold and headers, \$12.50. Graham supercharger, perfect condition, \$20.00. Model A Ford dual manifold, \$7.50. Plymouth and Dodge dual exhaust headers, \$7.50. G. Miller, PO Box 1417, Vallejo, Calif.

WANTED-'32 Packard light eight, 900 series, shop service manual, also would appreciate hearing of parts, sources, other Packard owners and owners of classic cars. W. Bates, 234 Locust Ave., Fairmont, W. Va.

WANTED-Synchro transmission in good condition with flywheel, clutch, linkage, steering column, etc. for '50 Oldsmobile 88. Will swap '50 Hydra-Matic or sell outright. C. Haines, 74 S. Third St., Columbus, Ohio.

SELL-'50 XK-120 Jaguar, '52 steel front fenders, new lacquer, new tires, Plexiglas \$700 top, curtains, wings, 17,000 miles. Consider TC, TD, 812 Cord in trade. R. Black, 1756 S. Yale, Wichita, Kan.

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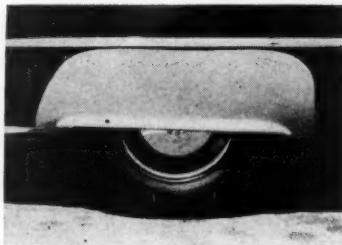
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SELL—One-year-old air horns with Buell air compressor, perfect; rear seat split windshield for '50 Cadillac conv. or hardtop new, never used. L. Hamilton, Jr., 2179 Yorkshire Rd., Columbus 12, Ohio.

SELL—'38 large size Twin Coach, very good condition except doors and no seats, four tires re-capped, \$1250. Also sell '28 Model A, chassis only, mechanically is tops throughout, \$300. W. Post, 560 S. Stanford Ave., Los Angeles, Calif.

SELL—'37 Lincoln LeBaron touring conv. sedan, 45,000 actual miles, excellent condition, originally was limousine for governor of N.J., \$500 for quick sale. B. Jenkins, 2026 W. Grace St., Richmond, Va. Phone 59485.

WANTED—'47 Lincoln Cont. hardtop, body exterior and interior must be nearly perfect, condition of engine unimportant. Send description, photos and best price. H. Moon, Box 337, Wendell, Idaho.

SELL—'812 Cord Beverly trunk sedan, condition better than average in and out. Painted metallic brown, whitewalls. H. Smith, 25796 Center Ridge Rd., Westlake, Ohio.

SELL—'37 Packard super eight sedan, side mounts, six good tires, body and interior clean, solid, engine fair, radio, heater, new battery. \$195 or best offer. R. Knaus, Forder Rd., Rt. 11, Box 376A, Lemay 23, Mo.

SELL—Classic car catalogs; Cadillac, Lincoln, Packard, also foreign and orphan cars, also Motor (N.Y.) annuals. Details for large stamped self addressed envelope. A. Twoby, 400 N. Kenmore Ave., Los Angeles 4, Calif.

WANTED—McCullough supercharger, complete and in good shape with pulleys, state condition and price. Also have Edelbrock V-12 Lincoln dual manifold for sale. R. Stange, 436 W. Washington, San Diego 3, Calif.

SELL—'51 Riley roadster in like new condition, driven 8000 miles, black with red leather interior and top, whitewalls, red wheels, make offer. A. Steine, 1321 Williamson St., Madison, Wis.

SWAP—'32 Ford roadster, channeled eight ins., no engine, fair condition, needs finishing. Car is in N.J., will swap for what have you? C. Osborne, ENDF, LSI (L) 867, 475 Cass St., Benton Harbor, Mich.

WANTED—'49 Mercury engine parts; manifold, carburetor, air filter, pan, oil pump, flywheel and housings, water pumps. Also '49 Ford heads. State price and condition. C. Dobson, 12488 Greene Ave., Venice, Calif.

SELL—'34 Packard Super Eight conv., new top, battery, almost new six-ply tires, rumble seat, vacuum brakes, needs paint, body work, restorable, photos. \$300. 2/Lt. G. Heitz, 3530th Trng Sqdn., Box 641, Bryan AFB, Bryan, Texas.

SELL—SCOT blower for MG TD with pulleys, belts, radiator water connection and intake manifold, complete except for carburetor connection, \$250. Dr. T. White, 101 E. Sunset Dr., S. Redlands, Calif.

SELL—'24 four-door, four-cylinder Buick, 48,000 miles, uphol. in showroom cond., body excellent and has new paint, engine in good running cond. B. Hagstad, 936 University Ave., Boulder, Colo.

WANTED—'10 to '15 four- or six-cylinder Packard roadster, un-restored, but complete, original and restorable, pay cash or have mint Stutz Blackhawk roadster for trade. J. McNutt, RD 10, Cherry Acres, Akron, Ohio.

WANTED—'41 Chrysler Royal or DeSoto, no fluid drives, or Buick Special, mint condition, prefer sedan or club coupe, Cash. J. Armstrong, 3043 Frymount Ave., San Diego 5, Calif.

SWAP—Body for Mercedes-Benz SS, magnificent, heavy, conservatively streamlined four-seater conv., for lightweight classic roadster or racing style body to fit same chassis. D. McCarthy, 503 Mayflower Apts., Virginia Beach, Va.

SELL—'39 Citroen sedan, body and engine in top condition, car is completely stock with factory parts throughout, Lido green paint with new harmonizing upholstery, \$750. C. Ingham, 8324 N.E. Sumner, Portland, Ore.

WANTED—'38 Cadillac V-16, touring body preferred, engine, appointments and body must be in perfect condition. Send photo, description and asking price. Capt. W. Smart, 19 Medical Group, APO 334, PM, San Francisco, Calif.

SELL—'29 Studebaker President seven-passenger sedan, body solid, upholstery good, needs paint job and some engine work, but will run anywhere as is. K. Barker, 1912 S. Seventh St., Springfield, Ill.

SELL—'37 Packard V-12, 1506 model, Deluxe sedan, 51,000 miles, original throughout, in excellent condition, Goodyear double eagle tires, \$750. G. Thompson, 88, 783, Greenfield, Calif.

SELL OR SWAP—'49 Ford Offenhauser 8:1 heads, manifold with carb and linkage, left bank manifold and pipe or swap for '46 Ford stuff. J. Bickham, Box 298, Upper Sandusky, Ohio.

SELL—'37 Cord Phaeton supercharged model, daily usage, body excellent, new tires, thoroughly rebuilt except top, upholstery, and chrome. W. Geist, 1580 Marlowe Ave., Lakewood 7, Ohio.

SELL OR SWAP—'37 LeBaron Lincoln V-12 K hard-top coupe, excellent condition throughout, 45,000 miles, over \$300 just spent on engine. \$750 or Packard or Rolls Royce phaeton. A. Cameron, 8604 Humble Rd., Houston 16, Texas.

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Motor Trend

WANTED—V-16 Marmon, any condition if reasonably complete, conv., or limousine preferred, within 200 miles of Portland, Ore. J. Zumwalt, 2938 S.E. Boyd, Portland 22, Ore.

WANTED—Used dual intake manifold for '47 Studebaker Champion. K. Chaffin, 57 Suffolk Ave., Hialeah, Fla.

SELL—'50 Oldsmobile 88 synchromesh transmission with bell housing and driven disc, 16,000 miles and perfect (from side-swiped Oldsmobile, engine #8A-457263 now in Mercury). Cpl. T. Blass, US 5505-1244, G-3, Sec. 6th AD, Ft. Leonard Wood, Mo.

SELL—'41 Mercury coupe; completely dechromed, lowered, new paint, 12,000 miles on rebuilt 256 in. engine, ported and relieved, Edmunds heads and manifold, Weber carb, #485. C. Johnson, 1708 E. 31st St., Lorain, Ohio.

SELL—New '32 Ford fenders and running boards, \$12 each plus shipping costs. J. Schwarz, 1116 Encanto Dr., Arcadia, Calif.

SELL—'33 Packard Super Eight sedan, special tan pigskin upholstery, engine just overhauled, and clutch rebuilt, original condition throughout. Best offer over \$285. W. Saettel, 2137 Barth Ave., Indianapolis, Ind.

SELL—'42 Lincoln Continental conv. in good mechanical condition, interior very clean, black, white-walls. \$2000. A. Eidmoh, 2349 N. 6th St., Philadelphia 33, Pa. GA 35544.

WANTED—Stutz Bearcat or Bearcat body regardless of condition and whether complete or not. Late type preferred, any year acceptable. W. Edwards, 839 Marsh Rd., Menlo Park, Calif.

SELL OR SWAP—'32 Ford roadster, 248 in. engine, dropped axle, hydraulics, column shift, Lincoln gears, new top, etc. \$975 or trade for another car. G. May, Ivanhoe Rd., Pittsburgh 34, Pa.

SELL—'40 Lincoln LeBaron two-seater coupe, leather top, immaculate, serial K-9671, actual mileage 21,000, six excellent six-ply tires, photo on request, \$1750. T. Tower, Westmoreland, N.Y.

SELL—'11 Maxwell touring car, new tires, tubes, top, upholstery, paint, brass very good, completely restored. C. Law, Jr., Box 56, Utica, Ohio.

SELL—'15 Overland touring car, series #85, extra nice cond. \$450. C. Law, Jr., Box 56, Utica, Ohio.

SELL—'37 Packard V-12 conv. club coupe, mechan. sound, good body and tires, needs paint, will sell only to classic fan, \$750. Dr. R. Barnard, Aspen, Colo.

WANTED—Service manual, catalog with chassis details, etc. on Marmon 16. Also parts for engine conversion and information on improving engine performance. H. Harris, Box 444, Champaign, Ill.

WANTED—To buy: lightweight road race chassis suitable for Marmon 16 engine and/or deDion axle or any suitable components. Also want Henry J or similar light four-place body. H. Harris, Box 444, Champaign, Ill.

WANTED—New or good used wire wheel hub caps for Willys-Knight, 668-708 '29-'30 #374957-#373-959, can send sketches in absence of part numbers, also other new parts. E. Stidworthy, 69-73 Main St., Warwick, N.Y.

SELL—'52 Mark VII Jaguar, 8500 miles, one driver, suede green, green leather, excellent condition. L. Miner, Box 310, Rice Lake, Wis. Phone 524.

WANTED—'42 seven-passenger limousine such as Lincoln, Chrysler Crown Imperial or Packard 180 in any fair condition at a reasonable price. W. Parker, 1807 Monroe St., Ft. Wayne, Ind.

WANTED—'42 Lincoln Continental conv. or two-door. Will consider '46-'48 model if price is right. State condition, price and photo if possible, cash deal. P. Jaffe, 1070 E. Michelle Ct., Memphis, Tenn.

SELL OR SWAP—'38 Ford conv. blue with white top, has lowering shackles, for Model T roadster, any year. Photos \$1, 5x7. W. Larson, 2227 W. 4th St., Williamsport, Pa.

WANTED—'41 to '48 Lincoln Continental hardtop in good or fair condition, within 300 mile radius of Des Moines. Send picture and price. R. Walter, 805 North 5th Ave. W., Newton, Iowa.

SELL—'32 Cord conv. coupe, showroom condition, was in auto show this year. Will send photo and complete description upon request. Reasonable. W. Andrews, 3848 Winthrop Ave., Indianapolis, Ind.

SELL—Auto ads; over 500 different manuals, catalogs, etc. (mention years, makes). Everyone who writes in gets an ad list. W. McMillan, 8412 Flower Ave., Takoma Park, Md.

SELL—'30 Packard model 740 limousine, excellent condition, 48,000 miles, will sell for \$400. D. Wray, West Rush, N.Y.

SELL—'16 Dodge roadster, 6000 actual miles, excellent condition, newly painted, new top and side curtains, price \$300. D. Wray, West Rush, N.Y.

SELL—Assortment of 70 new timing gears for cars older than '20, best offer. C. Kirby, Bowerman Rd., Scottsville, N.Y.

SELL—'37 Cord phaeton, excellent condition, completely restored, four U.S. Royal whitewalls almost new, hand-rubbed lacquer, chrome generator, sealed beams, Mallory coil and electric fuel pump. C. Kirby, Bowerman Rd., Scottsville, N.Y.

SELL—'30 Cadillac V-16 Fleetwood rumble-seat coupe, all original, excellent condition, six wire wheels, four tires like new, sports car or best offer over \$500. W. Furbeck, 753 Elm St., Neenah, Wis.

SELL OR SWAP—Mark VII Jaguar built Nov. '51, 8000 miles. Desire trade for '51 Allard K2 or XK-120 conv. or coupe. Make offer, will deliver. R. Blank, 20 Cammer Ave., Greenville, S.C. Phone 54805.

SELL—'39 Mercedes-Benz conv. sedan; complete engine overhaul, new tires, blue with blue leather, seven-passenger, best offer. Occupant, 1240 Pease Ct., Alameda, Calif.

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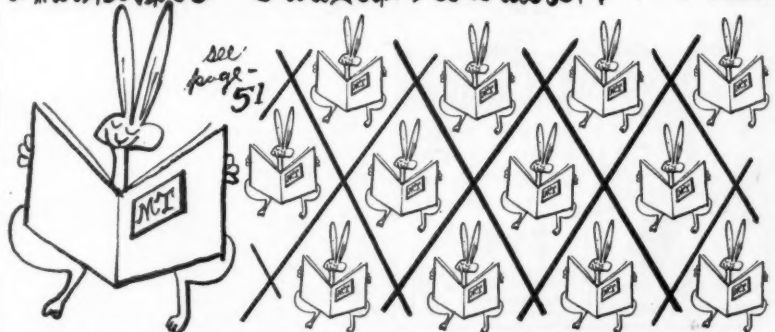
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WANTED-'41 Chevrolet four-door sedan in nearly new condition, with modified or low mileage engine. C. Hollowell, 7050 York Rd., Phila. 26, Pa.

SELL OR SWAP-'40 Buick four-door Super, running condition. Want '36-'37 Card, any model or condition for parts. M. Gienco, 2538 N. Rutherford Ave., Chicago 35, Ill. Meritmac 74073.

WANTED-For '32 model 902 Packard sports phaeton; two running board mouldings, front shocks, links, hood hinges (top), top bow-set, windshield frame. L. Curtis, 131 1/2 Grand St., Oneonta, N.Y.

WANTED-For '28 Lincoln phaeton, clock and cigar lighter. L. Curtis, 131 1/2 Grand St., Oneonta, N.Y.

SELL-'36 Lincoln K seven-passenger limousine, custom aluminum body by Willoughby, interior like new, telephone, 49,000 miles, excellent condition. Make an offer. Mrs. H. Lusk, 119 Birch, Vacaville, Calif.

SELL-'39 Lagonda V-12 sport saloon, aluminum body, very sporty lines, just finished complete mechanical overhaul by an expert, costing over \$2000. E. Caldwell, 1301 Kennedy St., N.W., Washington 11, D.C.

SELL-'48 Continental hardtop, new showroom condition with customized installation new '52 Lincoln ohv 160 hp engine, mint condition mechanically, buyers only, \$3500. No trade, subject your inspection. D. Acker, 1950 S. 77 St., Milwaukee 13, Wisc. Bluemound 88313.

SELL-'29 Model DA Dodge in running and restorable condition. R. Hall, 2436 1/2 Thornwood Ave., Winnetka, Ill.

SELL-'32 Ford roadster in good running condition, now being driven every day, \$175. H. Michael, 2105 Central Ave., Middletown, Ohio. PH 21352.

WANTED-Lincoln Continental, must be reasonably priced and in good condition. H. Gibbons, 140 N. High St., Covington, Ohio.

WANTED-Left rear door for Lincoln Baun touring cabriolet '36-'39 will fit, aluminum outside panel must required, inside condition unimportant. H. Metcalf, 63 Juana St., Crestwood, N.Y.

SELL-540-K Mercedes Benz close-coupled conv. coupe, AM and shortwave radio, heater, new tires, latest model in US '41, mint condition, \$5400. No offers. J. duMont, Greenfield, Mass.

SELL-'20 Buick roadster used daily by original owner until purch. in '46. Easy restoration, \$250. A. Creel, 2856 Falls Dr., Dallas, Texas. FE 6959.

SELL-New '42 to '51 Ford and Mercury dual exhaust systems, headpipes, tailpipes, all fittings and hangers, cost \$16.95 sell for \$11.50. Hollywood mufflers, \$4.97 each, ship COD. J. Gascho, 437 N. 17th, Noblesville, Ind.

SELL-Ohv Cadillac engine, complete, less transmission, \$600 or best offer, FOH. W. Gunderson, 120 E. Broadway, Council Bluffs, Iowa.

SELL OR SWAP-'10 White, four-cylinder touring car, new tires, body, top, paint, upholstery in good condition. Original brass head and side lights, can be driven anywhere. S. Thomas, 1531 Halsted Rd., Rockford, Ill.

SELL-'19 Ford T touring car, chassis fully restored, body sound and complete. New job forces me to part with this fine antique, \$195. L. Wilson, 61 Mountfort St., Apt. 6, Boston 15, Mass.

WANTED-'48-'49 MG TC in good condition throughout, no junk wanted, cash sale, send price and photo. J. Haddock, Jr., Box 223, Folkston, Ga.

WANTED-'41 and up Lincoln Continental hardtop, engine no consideration, rest must be good, price is a consideration to purchase. R. Emmott, 75 High St., Uxbridge, Mass.

WANTED-Non-condensing Stanley Steamer. F. Sample, 11 Danfield Rd., St. Louis 17, Mo.

WANTED-Slow speed motor, 125 hp at a maximum of 2400 rpm. Make, model, number of cylinders and price. Engine must be in top condition. R. Macro, Rt. 2, Box 31, Arcata, Calif.

SELL-Chassis for sports car, well along in construction, Rocket engine like new, standard transmission, five new tires with wheels, 102 in. wheelbase, \$550. H. Bremer, 4937 N. 32nd St., Milwaukee 9, Wisc.

SELL OR SWAP-Stock car, '40 Ford coupe, "Joe Wolf engine" 4 1/2 x 3 1/2, excellent condition, Harley Marsh rear end, 5th gears, lots of wheels, tires and spare parts. Bills Body Shop, 675 South Ave., Syracuse, N.Y.

SELL OR SWAP-'51 MG TD, chromed engine, accessories, 8000 miles, almond green throughout, excellent condition, never raced, \$1670. Lt. G. Tate, Jr., 139 Eaton Terrace, Box 6725, Mather AFB, Sacramento, Calif.

SELL-'49 Cosmopolitan, new parts, bumpers, radiator, frame, steering gear assembly, rear axle assembly, Hydra-Matic transmission, rear springs, gas tank, wheels, drive shaft, 50% off. J. Sivec, 19393 Hanna, Detroit, Mich.

SELL-Two V-8 Chrysler engines, brand new, with Edmunds dual intake manifold, polished aluminum valve covers, Mallory ignition, carbs, air cleaners, all wired and ready to run with the exception of fan, generator, and starter. \$1000 each, two for \$1800. F. Dominianni, 219-29 144 Ave., Springfield Gardens, N.Y.

SELL-Raja head for Model T, complete with push-rod, valves, rocker arms, etc. \$400. F. Dominianni, 219-29 144 Ave., Springfield Gardens, N.Y.

SELL-MG TD engine, ported head and complete with exception of generator, \$350. F. Dominianni, 219-29 144 Ave., Springfield Gardens, N.Y.

SELL-Ranger aircraft engine, 200 hp complete with mags and carb., crated, \$150. F. Dominianni, 219-29 144 Ave., Springfield Gardens, N.Y.

SELL-'51 Crosley Super Sports, red, 4000 miles, conv., \$650. F. Dominianni, 219-29 144 Ave., Springfield Gardens, N.Y.

SELL-'15 Model T touring, four new tires and tubes, new paint job, body and engine in very good condition, \$400. C. Rizzotto, 1426 62nd St., Kenosha, Wisc.

WANTED-Model T Fords, brass radiators, any other old cars, 1900 to '15. Send photo, price, description, engine, tires, etc. J. Cheney, 437 4th St., Santa Rosa, Calif. Phone 1076 W.

WANTED-'32 or '33 Auburn conv. coupe, Dayton wire wheels preferred, prefer running condition, might consider same year in Brougham style. Send pictures, information appreciated. M. Malen, 19 E. Bortgas St., Akron 11, Ohio.

SELL-'27 Packard four-passenger runabout, strictly authentic 85% restored, front seat best imitation leather, needs plating rubber, paint, pictures. J. Igenfritz, 62 E. Elm, Monroe, Mich.

SELL-'27 Kissel conv. coupe, one cracked piston, otherwise excellent, unrestored, 50,000 miles, send dime for snapshots. P. Readio, Highland Ave., Barrington, R.I.

SELL-'48 Continental black sedan, original equipment, whitewalls, needs front floor rug, will consider best cash offer or trade for small car. R. Schneblin, 224 East Dr., Dayton 9, Ohio.

SELL OR SWAP-'31 low-mileage Auburn conv. coupe, 898A, very reasonable, rumble seat, artillery wheels, extra parts, runs good, body very good, needs paint, top, easily restorable. A. Siegel, 1767 60th St., Brooklyn 4, N. Y.

SELL OR SWAP-Custom-styled Hupmobile Sky-lark, '41, with rebuilt engine in A-1 condition, what have you? W. Varney, 1920 SW 1st St., Miami, Fla.

WANTED-'31 Chrysler Imperial Eight, engine type CG in mechanically good shape, sports coupe preferred. K. Webb, 411 North St., Oakland, Calif.

SELL OR SWAP-'31 Buick 894 roadster, excellent condition, new rings, valves, brakes, rebuilt clutch, six-ply tires, wire wheels, needs paint, top, curtains passable. \$300 or best offer. D. Griffith, 18 Carnie, Hamilton College, Clinton, N.Y.

WANTED-'23 to '30 Kissel speedster, running and restorable, give model, condition and price, will pay for photo. M. Hembel, 1134 Crestwood Dr., Winston-Salem, N.C.

SELL OR SWAP-Rare '36 Cord conv., original throughout. Excellent condition, whitewalls, metallic green lacquer, new top, been in storage, but offers or trade. E. Berman, Box 444, Reseda, Calif.

WANTED-For '15 Ford touring; left splash apron, fr. and back seat cushions or frames, elec. vibrator horn, steer. col. button, top bows and sockets. J. Slade, 929 Ridgeland Ave., Hamilton, Ohio.

SELL-SCOT supercharger for '49-'52 Oldsmobile V-8. Never used, complete except for crankshaft pulley which was broken in transit, \$300 cash. G. Steward, Jr., Box 75, Prides Crossing, Mass.

SWAP-'32 Auburn V-12 engine, stored in Seattle since '42, want '40-'47 Packard Super Eight engine and transmission or complete car with good engine. B. Thompson, 6718 Vantage Ave., North Hollywood, Calif.

SELL-'37-'50 Plymouth Edmunds dual manifold, linkage and two V-8 carbs. Also Mallory distributor, all in good condition, \$65. R. Graham, 1074 N.W. 31 St., Miami, Fla.

SELL-810 Cord two-place conv., new transmission and good condition throughout, owner going overseas, \$875. No offers. Will sell without engine and transmission if desired. H. Elfrink, 1248 Elden Ave., Los Angeles 6, Calif.

SELL-812 Cord, five-passenger phaeton conv., engine, transmission completely overhauled, \$1150. No offers, will sell without engine. H. Elfrink, 1248 Elden Ave., Los Angeles 6, Calif.

WANTED-Rolls-Royce or Duesenberg in A-1 condition, any body style, send photo if possible. Lacer, 219 N. Jefferson, Junction City, Kans.

WANTED-'31-'36 Auburn speedster body complete cowl to tail, including windshield, top. Also outside exhaust system complete for Duesenberg J. Send photo, descrip. R. Easley, 1423 Jasmine, Denver, Colo.

SELL OR SWAP-'48 Indian Bonneville motorcycle, fully equipped, full race cam, engine clutch transmission, tires, chains, sprockets excellent. \$400. Swap for roadster or coupe. C. Pranger, 915 S. 6th, Clinton, Iowa.

WANTED-Touring car body in fair or good condition for '20 Essex Four. Within 300 miles. K. Burch, Branchport, N.Y.

SELL-'51 MG TD, 21,000 hard miles, red paint, top, rough. 8.6 head, heater, extras, spares, recent engine overhaul. Best offer, or \$1200 and payments (\$475). D. Grube, 42 Winter St., Delaware, Ohio. Phone 29284.

WANTED-Edmunds high compression head-dual manifold combination for '51 Nash Statesman, or any other one-d engine equipment for same. C. Towne, Rt. 2, Selah, Wash.

SELL-'31 Marmon Eight four-door, very good condition throughout, will sell or swap. R. Weatherby, 7549 E. 4th Place, Downey, Calif. LOrain 97186, Tpopaz 24828.

SELL-'34 Ford coupe, five windows, '47 engine, body lacquered and original, mechanically perfect, hydraulic brakes, 16 in. wheels, radio, heater, driven little since re-working, owners overseas, \$450. B. Freels, 605 S. Broadway, Urbana, Ill.

WANTED-Spool for '37-'40 Ford, Cook rear end, also GMC parts and equipment. H. Forman, 7029 N. 7th St., Phoenix, Ariz.

WANTED-Both rear fenders for '46-'48 Continental, send condition, price. N. McCarthy, 5657 Wilshire, Los Angeles 36, Calif.

WANTED-Pre-war automobile catalogs and circulars, any year, '27 thru '42 or older. Describe literature and price wanted. H. Mayer, Munith, Mich.

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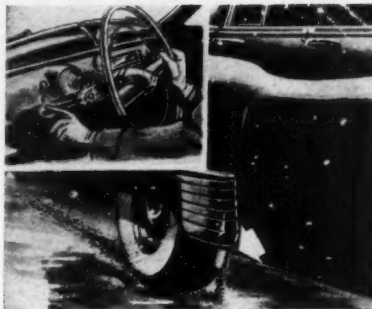
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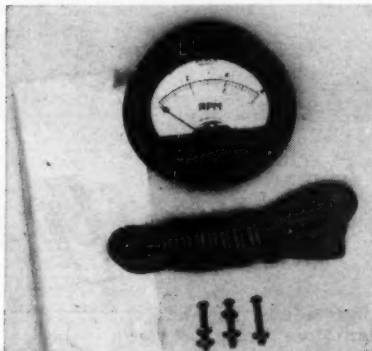
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312 W. Illinois St., Chicago 10, Illinois, can amplify that argument.

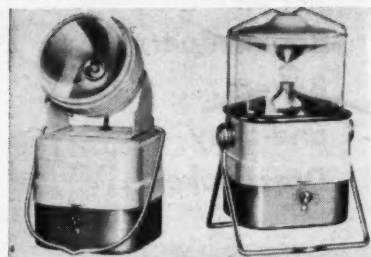
THROUGH the windshields of America peer more strained eyes than you could shake a large sized bottle of Murine at. Not the least of the many irritants which make our motorists unhappy are the wayward beams of oncoming headlights in night driving. One of the several solutions to this problem that has caught my eye is NO GLARE, a transparent plastic which tints the windshield. The manufacturer claims that this easily applied liquid plastic reduces glare, filters light for increased visibility. It's sold on a satisfaction-guaranteed basis by NO GLARE MFG. CO., 601 S. Vermont, Los Angeles 5, Calif. Write to the manufacturer for fuller insight on the wonders of chemistry.

THE HOUSE pauses to nod deferentially at the merchandising antics of BARLEC's. That gal comes up with more goodies than Santa himself. Latest is an electric tachometer that is universal



—fits any car, has a two-inch face, dash or steering mount, and can be installed in 10 minutes. It's called the PRECISION TACH. And get this—the complete kit for \$27.50! The address of Santa's helper in case you've not learned it by now—BARLEC's, 4872 Venice Blvd., Los Angeles 19.

NOT A CREATURE breathes that doesn't spin out his little span guided by a basic instinct for self-preservation; not a creature, that is, except man! The homo sap would seem to do his best much of the time to effect the opposite end—especially where automobiles are concerned. With this skeptical introduction I give you the WORK AND WARNING twin flashlight set manufactured by JUSTRITE MFG. CO., 2061 N. Southport Ave., Chicago 14, Ill. Trouble on the highway?—just set the red flasher light on top of the car to warn approaching traffic; the twin provides a bright steady work light. These are four cell lights, using standard flashlight batteries. If you're not interested in safety, you'll find dozens of other



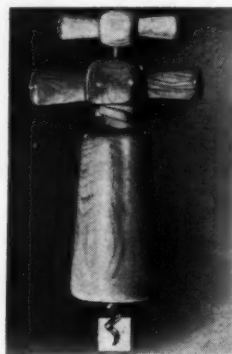
uses for these compact, efficient units.

WAS ever light so intelligently directed—that it came from the head instead of the hand! This BROW-LITE outfit really has something, as any coal miner or doctor could have told you years



ago. The BROW-LITE provides light where the wearer looks, frees both hands for work . . . batteries and bulb are included . . . price is \$2.75 postpaid. READ ENTERPRISES, 29 Read Street, Lowell, Massachusetts.

STIRRING a mellow martini may be the mark of a good host, but if you're going to impress the neighbors as a cosmopolite—you need FRENCHIE,



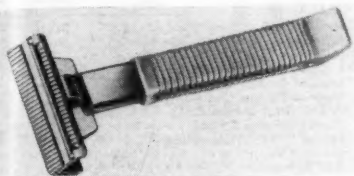
"The Cork Puller Extraordinaire." You can open bottles the smart way, without crumbling corks or wasteful spillage. Top handle engages the cork, lower handle eases it out whole. Made in France, of sleek blond hardwood and finest steel . . . \$1.50 postpaid. LOUIS DUPS INC., 89 Broad St., New York 4, N. Y., sells this handy dandy with the guarantee: "Your money back if you are not delighted." Go on—be delighted.

NOT EVEN that bottomless portmanteau that used to belong to dear Aunt Hepzibah could contain the maps, the glasses, the notebooks, and general junk which overflow from my Ford's unhappy glove compartment. THE MATCHLESS ALBUM CO., P.O. Box 121, Long Branch, New Jersey, provides an answer to this housing problem with the AUT-O-POCKET, a catch-all, smart looking pocket of top grain cowhide (6½ in. x 5½ in.) that hangs from the glove compartment door. It is gift boxed, has a novelty pencil and key chain. \$3.50 postpaid. Looking for a practical gadget gift for a motoring friend?

A MOUSE doesn't have to bother about shaving his whiskers—but are we not men? All who

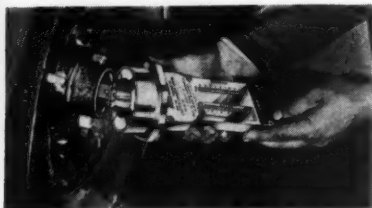
Motor Trend

answer in the affirmative are prime targets for the PAL BLADE CO., INC., which are lathering up the country for a real shave with their new PAL INJECTO-MATIC RAZOR. Precision-engineered, automatic blade "lock-in," perfect shaving angle and balance—all kinds of advantages! Razor



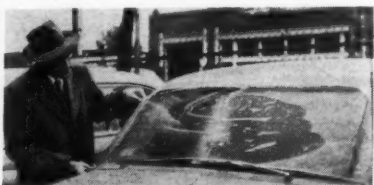
comes with 10 injector blades and a travel case that features a press-button, spring-opening cover. It's a \$1.89 value for just 89¢. PAL BLADE CO., INC., 43 W. 57th St., New York.

SINCE a good many of our readers are professional mechanics, alignment specialists and such—this is a pretty good rooftop from which to shout about the new MAGNETIC CASTER-CAMBER GAUGE marketed by SNAP-ON TOOLS CORP. of Kenosha, Wisconsin. The MAGNETIC GAUGE provides an accurate, simple and portable means of checking caster and camber . . . allows you to



show the customer in a few minutes what's wrong with his car, making it easy to sell him a front-end alignment . . . stays in position of the car while you do the actual work, assuring you of a visual reading while corrections are being made. For full information on the gauge, as well as their new Turntables and Trammel Bars, write SNAP-ON TOOLS. Their instruction booklets and up-to-date specification charts will provide valuable reference for even the old pros.

IT IS APPARENT that we have a season or so to go before science dispels all winter motoring irritants with "push button" simplicity. While we wait, let's use some common sense applications of materials at hand. One such answer to



the frosted, ice covered windshield is the CENCO PLASTIC NO FROST WINDSHIELD PROTECTOR. It's made of polyethylene, which will withstand 60° below temperature without becoming brittle . . . will not stick to windshield . . . you put it on in a few seconds with nothing to tie or adjust, car doors hold it in place. Put in on when you park . . . take it off and toss it in the glove compartment when you drive . . . and what have you got?—a clean windshield without scraping or scrubbing. \$1.00 postpaid. CENTRAL STATES PAPER & BAG CO., St. Louis, Mo.

FEW OF YOU may have occasion to remove or replace an engine block in the family car—or change your coil springs. But the COFFING HOIST-ALL will do a million other things too. As a ratchet-type hoist it may be used vertically for

any job requiring a powerful overhead lift; it may be used horizontally for pulling, skidding or stretching. It can be used as a powerful and completely safe jack which provides a full 44 inches of lift. Home mechanics should find as many uses for this versatile tool as the track experts. Get a lift from COFFING HOIST CO., Danville, Illinois.

TAKE NOTE of the name "FILTERALL." It has gained a lot of prestige since we first saw the unit (we thought it was great then and haven't changed our opinion); it's going to wind up a household word now that Old Mister Success, Ernie Newhouse of NEWHOUSE AUTOMOTIVE INDUSTRIES, has taken on distribution. The micro-porous permanent bronze filter element does a great job of freeing your oil from contaminants . . . the unit is economical, efficient . . . installation is simple. Complete FILTERALL—\$12.95; Conversion Unit (to adapt your present filter)—\$6.95. If you don't know the NEWHOUSE address by this time, just look through the book.

THE WORD GAME that I play with my secretary in the course of preparing this edifice (she



can't spell and I can't type) can now become a threat to Rodgers and Hammerstein. With the help of WILCOX-GAY's new TYPATUNE. TYPATUNE looks like a streamlined typewriter with standard keyboard, but the keys hit 32 musical notes—2½ chromatic octaves. Made in Switzerland . . . entertaining and educational . . . retails for \$22.95 . . . you don't have to know anything about music and you don't have to know how to type . . . and you get a special songbook illustrating basic exercises in touch typing which emanate as well-known tunes when typed. Anyone care to hear a little concerto entitled "The Quick Brown Fox Jumped Over the Lazy Dog"? WILCOX-GAY CORPORATION, 70 Washington St., Brooklyn 1, New York.

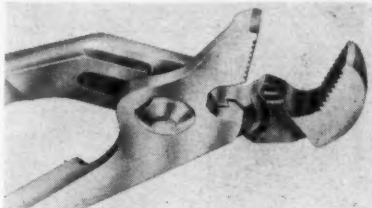
I INDULGE EACH MONTH a fleeting desire to catch up with my trade topics correspondence the easy way—what a blaze that backlog would make! But this would be a disservice to the readers—there are too many good things to talk about. Like the CIMIER WATCH, for instance. The CIMIER is a rugged, practical, he-man's



watch with imported Swiss movement . . . sweep-second, stop-watch feature . . . tachometer . . . telemeter . . . shatterproof crystal . . . radium dial and hands . . . and a FULL YEAR guarantee. \$9.95 postpaid. NASSAU CO., Box 792, G.P.O., New York 1.

I'LL CLOSE THE YEAR with a tight grip on things (courtesy of CHAMPION DEARMONT TOOL COMPANY). The new CHANNELLOCK PLIER No. 420

has undercut tongue and groove adjustment, giving the tool the most positive adjustment of any plier on the market. The CHANNELLOCK is strong,



tough, long-lived and universal in its use. The manufacturer is proud of this addition to a famous line. Who wouldn't be proud to have a set of teeth like that!

WITH SPECIAL approval we hail the production of the new ARNOLD CAR, a combination sports and family automobile using the MG TD chassis and designed by Bertone. Two models have been shown—a Saloon Coupe and a Convertible. The Coupe (pictured above) has a combination steel and aluminum body, is finished in Marine Blue with beige leather upholstery. It weighs only 40 pounds more than the TD roadster and uses the



famous 1½ litre MG engine. Price on each of the models is \$3585 f.o.b. New York . . . deliveries will start in January. The ARNOLD CAR is distributed by S. H. ARNOLD, 415 E. Erie St., Chicago 11, Illinois, a company with a large reputation for its fine foreign car imports.

HOLIDAY GREETINGS—from all the Trenders. And be sure to give TREND subscriptions to all your best friends come Christmas. While you're playing S. Claus give the newest Trend Book to any young mechanical enthusiast you like. It's *Hot Rod Your Car* by the editors of *Hot Rod Magazine* . . . sells for 75¢ . . . and is crammed with all the best hot rod know-how.

RINGING IN YOUR EARS, the voice of ARIENS COMPANY of Brillion, Wisconsin murmurs a siren song—to you, that is, who wake of a winter morn to find your walk and drive a beautiful drifting sea of white. "Don't bend your back," goes the song, "use the Ariens Yardster SNOTHERO with rotary tiller. It's self-propelled, with wheel drive, does a clean-cut job of power



shoveling through light or heavy snow and slush . . . throws—not blows—the snow up to 15 feet away. Let's not make work of this winter problem." That voice in your right ear belongs to your wife: "Herman! Get out and make with the shovel—you want Junior should use snowshoes to get to school?"

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363 cam grinds available from Harman & Collins... the largest, most versatile line of cams in the world. Whether you drive a Ford, MG, Cadillac or almost any other make... for competition or street... there's a Harman & Collins grind that's right for your purpose - precision-built to your complete satisfaction. 363 DIFFERENT CAM GRINDS... thoroughly tested and inspected by specialists to insure perfect timing, lift and running clearance. Whatever model you drive, there's a Harman & Collins cam designed for your car!

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MOTOR TREND INDEX

Complete Index of Articles
from Jan. '52 to Dec. '52

NOTE: This index is a compilation of articles which have appeared in issues of MOTOR TREND from Jan. '52 through Dec. '52. It is being presented as a convenience for readers who may have missed an article in which they are particularly interested. It will be noted that the articles have been placed under specific categories for easier reference, and the names of some are not necessarily the titles of the articles. This index does not include such regular monthly features as "Spotlight on Detroit," "Classic Comments," and "Sporting Scene"; however, the most important cars and items from these have been listed under their particular category.—Editor

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"Well, if the thousandth customer doesn't come in by nine, grab somebody off the sidewalk and give him a car!"

How You Can Get 42 Miles A Gallon from Your Car!

By Chester Widman & Kevin Kornfeld

In 1948, top auto economy engineers proved that it was possible to double the miles per gallon of any car regardless of make or age . . . actually get from 42 to 47 miles a gallon WITHOUT MAKING ONE MAJOR MECHANICAL CHANGE.

If your car is less than 15 years old and hasn't hit the 100,000 mile mark . . . then in less than 24 hours, you can boost your mileage 2 to 9 more miles per gallon. Within seven days you can be getting 50% better mileage . . . get up to 8000 miles between oil changes . . . and "dig out" from stop lights 0 to 60 m.p.h. in less than 14 seconds.

To Get Top Performance From Your Car—You Must Know These Facts!

In 1948, the top national authorities on automotive efficiency and economy decided to determine once and for all the real capabilities of the average American auto. They experimented with all makes and years of cars . . . just like the ones you and your neighbors drive . . . and allowed no changes or adjustments that the average car owner or his mechanic couldn't do with the tools he had in his own garage. For over five months these men studied all parts of their cars, experimented with every type of fuel mixture, and actually measured their gasoline with eye droppers. And this is what they discovered about your car. **THIS IS WHERE YOUR GASOLINE REALLY GOES!**

1. These engineers discovered that nearly 40% of the power generated by your gasoline does not move your car one inch, but is used solely to overcome friction. They proved that by reducing engine friction even by a small amount you can increase mileage by 3-4 miles per gallon.

2. They discovered that 30% of your gasoline is wasted in the engine firing chambers. That its power blows out through the exhaust, and that a simple automatic way to seal in that power can convert waste gas into mileage.

3. That's right, they discovered that 70% of the gasoline put into your engine is wasted. That only 30% is converted into power to drive your wheels.

These men reasoned that if you could use an automatic filler to seal up those cracks in your engine walls



"WHO SAYS YOU CAN'T GET OVER 25 MILES PER GALLON IN A JEEP? I MAKE DELIVERIES, MOSTLY IN THE CITY AND GET 28 TO 32 MILES PER GALLON. THANKS FOR EVERYTHING."

John Adams
1397 W. 4th St., L.A. 13, Calif.

and trap that wasted power . . . that if you could make one simple adjustment with a wrench and increase the firing power of your plugs . . . that if you could make one simple turn with a screw driver and cut your carburetor waste in half—then you could convert that waste gasoline into mileage instead of exhaust.

At the same time—because you were getting much greater power

from your engine—you would automatically get faster pickup, greater acceleration and much less wear.

These theories were put to test in 1948 and every year since with the following results:

This Is the Performance Your Car Can Give You!

In 1948, a 1946 Pontiac 8 won first place. Its mileage was 72½ miles per gallon! And again, in 1949 a 1948 Chevrolet won first place with 79 miles a gallon.

Do you have an old car? A 1937 De Soto got 44 miles a gallon. The only difference between this car and yours is knowledge.

All that matters—the only real difference between this champion performance and ordinary cars—is know-how.

Try these simple experiments yourself. Apply this very same know-how to your own car. You may not get quite what the experts get, but watch your mileage soar. **PROVE IT YOURSELF!**

All you need is a screw driver and this page.



"I'M A FAST DRIVER AND MY TIRES NEVER LASTED LONG . . . I TRIED LOTS OF BRANDS, TOO. YOUR 'COMMON SENSE' TIRE ECONOMY TIPS HAVE SAVED ME NEARLY \$100 THIS YEAR."

Karl Keeler

3195 Matador, Pasadena, Calif.

These 3 steps alone can increase the mileage of your car about 2 to 9 miles a gallon:

Stop Carburetor Waste in 5 Minutes. Turn your motor idle for 3 minutes. Let the idle adjustment screw to the right until the engine dies. Then, with the engine still dead, turn the screw one-half turn to the left. **THAT'S ALL THERE IS TO IT!** Start your engine again. It will turn over more quietly . . . start easier . . . give more power and the economy may amaze you.

Buy Your Gas at Night. Fill up early in the morning before the sun's heat expands the gasoline in station tanks and pumps. Save 2% to 4%!

This Really Counts Up A Tip on Professional Driving! Each day before driving your car, start the motor and then before you put your foot on the clutch or shift your gears—let the motor idle for exactly two minutes.

Why? Because a cold engine has no lubrication around its pistons. Quick starts use 75% of your gasoline simply to drive that oil through your engine. Drive 5 blocks with a cold engine and you use more gas than driving 3 miles with a warm engine.

ADD 30 MILES TO THE TOP SPEED OF YOUR CAR!

Learn how you can double the power of your present engine . . . using just the tools you already own. Learn one simple trick which will get you the equivalent of 15 more horsepower.



"I'M A SALESMAN AND DRIVE HUNDREDS OF MILES EVERY WEEK. BELIEVE ME, IT MEANS A LOT TO GET 29 MILES PER GALLON ON REGULAR GAS WITH MY HEAVY CAR!"

John Tobin, 200 S. Doheny, Beverly Hills, Calif.

SAVE 30% TO 50% ON YOUR CAR BILLS

You have just learned three of the almost 100 automotive hints developed by these high mileage experts. Now, suppose that you could have these same experts at your elbow 24 hours a day! Suppose that these experts showed you a simple way to adjust your tires, to get 3 to 5 more miles per gallon . . . an easy, 30-second adjustment on your spark plugs that could add as much as 8 miles a gallon . . . special mixtures of gas, alcohol and water that give tremendous mileage boosts.

Suppose that these Detroit and Indianapolis engineers gave you the trick of adding 3 years life to your car by automatically cleaning out engine waste . . . or the secret of quickly adding \$200 to the resale value of your car . . . or how to add 15,000 miles to tire life simply by using your nose.

Yes, and suppose that these engineers showed you what to do in any emergency . . . even when your battery, or water or oil systems fail . . . such as how to start a dead battery car with your bumper jack.

THIS IS EXACTLY WHAT A NEW BOOK—THE SPEED, POWER AND ECONOMY ENCYCLOPEDIA — DOES FOR YOU

This book took over 3½ years of extensive research to produce. It is guaranteed to help you save up to 33% on gas . . . up to 80% of your present oil bills . . . up to 85% of your present repair bills . . . and to add as much as \$200 to the resale value of your car. Hundreds of photos and drawings show you exactly how to do it.

STOP PAYING FOR THESE "SUCKER" REPAIRS

The complete, step-by-step, "Fix It Yourself" section can save you \$75 this year alone. Repair instructions tell how to fix a leaky radiator . . . save \$9 . . . how to repair your own clutch and save \$17 . . . how to do a 10 minute brake job that can save up to \$25. Gives the low down on FAIR repair charges.

PROVE IT YOURSELF AT OUR RISK!

This amazing Speed & Power Handbook is not sold in stores. It is sent to you C.O.D. You send no money but just pay postman \$1.98 plus a few cents postage when book is delivered. You use this book for 10 days at our risk . . . and if it does not live up to all our claims . . . help you get far greater gasoline mileage and power from your car . . . just return it and your entire \$1.98 price will be refunded. You try this great handbook at our risk . . . you can't possibly lose.

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Remember, both booklets are yours to keep—whether or not you keep the big book. So act TODAY! Write: Newhouse Automotive Industries, Dept. BM-12, 6238 Wilshire Blvd., Los Angeles 48, Calif.

SEND NO MONEY! Mail FREE GIFT Coupon Now!

NEWHOUSE AUTOMOTIVE, Dept. BM-12

6238 Wilshire Blvd., Los Angeles 48, Calif.

Gentlemen: Without obligation, please rush me the new **SPEED AND POWER HANDBOOK** for no risk examination and trial. I agree to pay postman on arrival \$1.98 plus postage. If I am not completely satisfied I may return in 10 days for full \$1.98 money back.

Also send me **ABSOLUTELY FREE** the 2 handbooks: "Economy in Driving" and "How to Obtain 150 Miles Per Gallon" (reg. \$1.50 value). I understand these are mine to keep as a **FREE GIFT**, whether or not I keep the **SPEED AND POWER HANDBOOK**.

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City _____

Zone _____ State _____

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HOW TO
BUY A CAR

Custom
Cars

NEW NEW IDEAS FOR CUSTOMIZING YOUR CAR

your car

HOW TO MAKE YOUR
HOT ROD
YOUR CAR



